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PAYNE

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HISTORY

OF

THE NEW WORLD

CALLED

AMERICA

BY

EDWARD JOHN PAYNE

FELLOW OF UNIVERSITY COLLEGE

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PREFACE

ONLY one part of the present volume—that in which the social economy of the advanced aborigines of the New World is traced to its physical conditions (pp. 271 to the end)—appears to require any remarks by way of preface. In this part of the work the writer has taken the unusual course of explaining the facts under investigation by a theory of human advancement not only not generally recognised, but not hitherto formally enunciated. Some may find it paradoxical, or perhaps merely trivial, to assign to advancement no loftier origin than the organised provision of the food-supply on an artificial as distinguished from a natural basis. In the present volume the writer's view is not presented in its complete form. In the next volume, in which the Second Book of the work will be brought to a conclusion, it will be shown how the organisation of food-provision on the artificial basis has been combined with that of defence, and how communities in which these combined organisations have been fully elaborated have extended their boundaries at the expense of others whose social arrangements were less advanced. The writer has not imported these general topics into his work by choice. Compelled, for the purposes of the enquiry, to investigate the nature and origin of civilisation, a problem undoubtedly capable of being solved, he was unable to find, already formulated, any solution of it sufficiently definite to be capable of practical application

to particular cases, such as that which forms the subject of the Second Book of the present work. Why this should be, considering the large amount of attention which the general facts of savage life have for many years past engaged, does not clearly appear. Probably the mode in which most investigations of this subject have been conducted has tended to bring into prominence the points of difference, rather than the points of agreement, between savagery and civilisation; consequently little or no light has been thrown on the question why, when, and by what precise means man emerged from savagery and entered on the path of advancement. Be this as it may be, the writer, thrown on his own resources, was compelled to seek for himself the law by which such facts as those with which he had chosen to deal were governed. Whether this theory will ultimately be accepted as a scientific one it is not for him to predict: it suffices to say that it has commended itself to him as the only rational explanation of the facts, and that its enunciation was therefore necessary to the due presentation of the results of his enquiries.

The problems to which the writer's attention has been more immediately directed have a scope more limited, though in itself sufficiently ample. To restore, if possible, the true features of the advanced communities of the New World, to analyse their social structure and economy, to measure by some definite standard the degree of progress they had attained, and to trace their history, so far as it can be recovered, distinguishing what can fairly be accepted as fact from what can be shown with reasonable certainty to be fabulous, constitute in the whole a task of some magnitude: a task, it may be, which cannot be satisfactorily accomplished by any single-handed effort. In the course of such enquiries, the questions are naturally suggested, (1) whether the advanced aboriginal communities can properly be ranked as belonging to the class of civilised nations?

and (2) whether their advancement, whatever rank may be assigned it, was imported, either wholly or partially, from the Old World, or was entirely of indigenous growth? The older writers usually represented the Mexicans and Peruvians, more especially the former, as highly civilised peoples: later critics have described them as utter savages. The truth lies between these extremes; but it is nearer to the latter than to the former. The writer believes that the facts here presented to the reader sufficiently show that the advancement of Mexico and Peru falls short of that degree to which the name of civilisation can be properly applied. The Mexicans and Peruvians were barbarians: that is, while possessing a material basis sufficient to support a low degree of civilisation, their habits of thought and life remained essentially savage. The Mexican warriors, the most advanced class found in America, were cannibals; in both Mexico and Peru regular human sacrifices formed an essential part of the scheme of life. Cannibalism was unknown in Peru, though it existed among the Indians of the forest districts to the eastward of the Andes (the *montaña*) and to the northward of Los Pastos, the northern limit of the Inca dominion: this may reasonably be ascribed to the fact that the Peruvians possessed large domesticated food-animals, which were wanting in Mexico. In most other respects the Peruvians were at a lower level than the Mexicans. In Mexico there existed a rudimentary commerce, carried on in the valley by boats on the lakes, in other districts by porterage. Slavery, an important element in the earliest advancement, had come into existence: cotton cloths, cacao-beans, gold-dust, and slaves served as the means of exchange. In Peru, so far as appears, commerce was unknown; there was no recognised medium of exchange, nor was there any division of labour except that between the warrior and the cultivator. The Mexicans had a greater variety of foods, and were more skilled in preparing them, than the Peruvians. The

Mexicans not only depicted with great facility natural and imaginary objects, in various colours, both on cloth and on a species of paper, but they had invented a conventional series of abbreviated pictorial signs, which approximately answered the elementary purposes of writing. This pictography, though known to some other North American peoples, was practised in none of the advanced districts except Mexico: no mode of assisting the memory existed in Peru except the *quipu* or knotted cord. Both the Mexicans and the Peruvians had a rudimentary practical geometry; the former divided the circle accurately into segments for the purpose of constructing calendar-stones, and made maps showing not only the lands of each village, but the general distribution of the country. Of the geometry of the Peruvians we have no evidence except their architecture: this proves nothing except the existence of some simple method of linear measurement. Religion, together with sacrifice, its essential embodiment, was more completely developed in Mexico than in Peru: in the former district, as will be seen from the account of the worship of Tezcatlipoca, religion was already leavened, however slightly, by morality. The calendar of Mexico was far more advanced than that of Peru. The Mexican warriors were better armed and organised, more skilful, and more courageous, than those of Peru: in the latter country the desperate and protracted defence made by the Mexicans against Cortes could never have been maintained. The ornamental architecture and sculpture of the Mexican peoples were superior to those of the Peruvians: compared with the carvings of Tiahuanaco, those of Palenque have almost the appearance of having been executed by civilised artists. On the other hand, the Peruvians were better skilled than the Mexicans in the working of metals. They were clever and original potters and admirable stonemasons: there is nothing in Mexico to compare with the agricultural terraces and acequias of Peru. Lastly, the

Mexican language was better developed than either Quichua or Aymara. The great work of Sahagun, as is well known, was originally written in Mexican for the Mexican people: it would probably be difficult to compose such a work in either of the Peruvian languages [1]. In a confederacy like that of the Mexican pueblos the art of speaking was necessarily cultivated: the 'palavers' of Montezuma, given by Bernal Diaz, show considerable power of expression. Some of the prayers given in Sahagun, undoubtedly native in their body of thought and mode of expression, though they received their existing form from an European hand, evince the same quality in a higher degree. In Peru oratory appears to have been unknown: the fragments of ancient speech anterior to the conquest which have survived are of extreme simplicity. In the copious Mexican of Sahagun little of the substance of the Gospel narratives is lost; a certain degree of simplification has been necessary in translating them into Quichua and Aymara.

The facts here collected go far to confirm the view that while the American aborigines had immigrated as savages from the Old World, the aboriginal advancement of America was of indigenous origin. If, as the writer has contended, advancement is universally based on the conversion of natural food-resources, already known to savage tribes, into an artificial basis of subsistence, the indigenous origin of American advancement may be considered as practically demonstrated: for the llama and the paco, the potato, the manioc, and the maize, indigenous to the New World, were absolutely unknown in the Old, while the corresponding bases of agriculture and herdsmanship in the Old World were equally wanting in the New. The aborigines, moreover, had reduced to cultivation every

[1] The Mexican original, to which Sahagun in the Spanish version alludes by the name of 'la letra' or 'the Text,' still remains in manuscript. It is clear from these allusions that it contains much interesting matter which has been omitted in making the Spanish version.

indigenous food-plant capable of cultivation and worth the trouble of cultivating, and had domesticated every indigenous animal capable of profitable domestication[1]. An advancement based on the use of indigenous food-materials, which positively exhausts the list of plants and animals available for the purpose, all of which have apparently been utilised by savages before becoming the basis of an artificial food-supply, is manifestly itself indigenous. To this it may be added that no people in a low grade of advancement, so far as is known, has ever been raised to a higher one by the arrival in its midst, as an isolated incident, of a small body of individuals belonging to some more civilised country. Advancement cannot be imported, so to speak, in single parcels: a constant communication must be maintained during a considerable time between the pioneers of civilisation and the country of their origin. Otherwise a process inevitably takes place, if not at once, in the next or following generations, for which our language has no name, but which was well known to the Greeks as ἐκβαρβάρωσις. The new-comers quickly sink to the level of the aborigines: the legendary colony of Iolaus in Sardinia, so graphically described by Diodorus, is a typical instance[2]. Retrogression is as natural to humanity as progress, and far more easy.

That civilisation rests historically upon religion, in some form, as its basis, will scarcely be questioned, though opinions may reasonably differ as to the mode in which religious conceptions have originated. It is sufficient for the writer's argument that they occur in the stage of natural subsistence, technically known as savagery, and that their presence is manifested by the practice of offering

[1] Lord Macaulay's remark on the Mexicans, quoted at p. 150, requires some qualification. The Mexicans were not wholly ignorant of the use of metals, though they preferred stone for their weapons: nor can they fairly be blamed for not domesticating animals to labour. No animal both capable of labour and amenable to domestication existed in the country.

[2] Bibl. Hist. Lib. iv. c. 29, 30.

food and drink to invisible beings, most conveniently described as 'spirits,' who are understood to exercise a favourable influence over human fortunes, especially in regard to the food-supply. This practice has been continued and developed when the food-supply has been organised on an artificial basis; religious ritual has thus been moulded to its definitive form under the influence of agriculture or herdsmanship, or of both combined, as the case may be. These invisible beings, visibly embodied in the form of gods, have in fact been transferred, concurrently with man himself, from a natural to an artificial basis of subsistence. This general theory of sacrifice is by no means new, though it appears in its place as a deduction from the general law first mentioned; that the purpose of sacrifice was simply to feed the gods was admitted on all sides in the controversies which accompanied the diffusion of Christianity in the ancient world [1]. In the Old World, as in the New, it was understood, to use the pregnant though barbarous expression of Porphyry [2], that these invisible beings were endued with force by the shedding of blood and the combustion of flesh (*δυναμοῦσθαι ταῖς ἐκ τῶν αἱμάτων καὶ σαρκῶν κνίσσαις*): the altar, in the words of Dean Spencer, was merely the table on which food and drink were set before the languishing deity. To the ancients, as to the aboriginal Americans, a religion without sacrifice appeared to involve a contradiction in terms, and to be in substance and in fact mere atheism. The monstrous waste involved in the sacrifices of Peru had indeed led to attempts to reduce the number of the huacas, and even, it is said, to a project for abolishing the worship of all except the primitive Creator-god Pachacamac; the authorities, however, explicitly state that the rites of the new monotheism were of a sacrificial character (p. 454). The aborigines never

[1] See the authorities in Dean Spencer's De Legibus Hebraeorum (p. 650, ed. 1685).

[2] De Abstinentia, Lib. ii. § 42.

reached the conception of religion without sacrifice. The writer has shown the alleged non-sacrificial monotheism of Nezahualcoyotl to be a mere fable: this conception, at once rational, humane, and economical, was utterly unknown previously to the introduction of Christianity.

Between the religious and cosmological ideas of the New World and those of the Old there is sometimes a parallelism so close as to suggest doubts as to the genuineness of the former, especially in instances so striking as that of the Peruvian account of the Creation (p. 460). It has been the writer's practice, in dealing with alleged facts of this kind, to begin by rejecting them, to search for facts which might corroborate or discredit the statement, and only to admit them after a rigid and patient scrutiny. Such a process usually results in the admission of much which at first appears incredible. The writer entertains no doubt that the Peruvian legend of the creation is a genuine remnant of indigenous thought. The truth seems to be that during the earlier stages of advancement the human mind works everywhere in much the same way: it would, indeed, be strange if the same elementary ideas were not thus encountered in places widely distant from each other. Such coincidences give to the study of ethnology one of its principal fascinations.

Those who are already in some sense 'Americanists,'—to use an unfamiliar though undeniably useful word,—will find that in the course of the present volume some views hitherto generally accepted are rejected. The writer has thus disposed of the purely fictitious goddess 'Teoyaominqui' of the Mexican antiquaries (p. 423), the hideous 'bear-faced' Tezcatlipoca of Bernal Diaz (p. 478), and the alleged worship of the one true invisible supreme God by Nezahualcoyotl (p. 490). He has been compelled to reduce considerably the importance usually assigned to Sun-worship in Peru: in compensation he has indicated for the first time the prominence and significance of the same

form of religion in Mexico, and by following a clue given in an early work of Mr. Tylor, who was the first to throw a ray of light on the most obscure question in American mythology, he has established the solar character of the much misunderstood Toltec god Quetzalcohuatl. A more curious and widely spread misconception, the 'Socialism' often alleged to have existed in Peru under the Incas, remains to be corrected in the next volume. Nowhere have the distinctions of rank and the rights of property been more rigidly maintained than under the severe despotism of Peru: this so-called Socialism, when examined, proves to be nothing but the forced common labour exacted from the peasantry. It speaks volumes for the neglect of American history to find more than one eminent authority harping on the 'State Socialism' of Peru. Russia or Turkey might with equal propriety be quoted as examples of 'State Socialism.'

The writer has been sparing in making corrections in the received etymology of American names: but the startling absurdity which marks the current explanations of some important ones, such as Titicaca, Cuzco, and Mexico, has led him to indicate what he believes to be their true meaning (pp. 295, 405, 445), which is in each case based upon some early authority. In the case of Mexico, the name appears to be one among several indications of a previous occupation of the site by the Otomi aborigines: the derivation from the Otomi *mêhê* (a spring) is founded upon an explicit statement twice made by Gomara, who undoubtedly had good authority for making it[1]. The

[1] Conquista de Mejico, cap. 78: 'Esta la ciudad repartida en dos barrios: al uno llaman Tlatelulco, que quiere decir "isleta," y al otro Mejico, donde mora Motecçuma, que quiere decir "manadero." . . . . Quiere Mejico decir "manadero" o "fuente," segun la propriedad del vocablo y lengua: y asi dicen que hay al rededor del muchas fontecillas y ojos de agua, de donde le nombraron los que primero poblaron asi.' The direct allusion here seems to be to *ameyalli, ameyalco*, 'a spring,' compounded of *atl* (water) and *meya* (= it bursts forth); the Otomi word *mêhê* is probably the true root. The x or j of Mexico,

curious ceremonies of the Atamalqualiztli (p. 428), celebrated alike in Tezcuco and Mexico, were, beyond reasonable doubt, of Otomi origin: the most remarkable, however, of these Otomi survivals, if it can really be regarded as such, was the Teotlalli (p. 465), perhaps the Tenochtli, or '(Indian) Fig-tree on the Rock,' of the Aztec immigrants.

In the latter part of the volume the writer has commonly employed a certain number of Spanish and aboriginal words. In some cases this has been inevitable: occasionally such words have been used by preference, at the risk of appearing pedantic, for the purpose of escaping that intrusion of European ideas, utterly foreign to aboriginal America, which would have followed the use of certain common English terms. Instead of speaking of 'Emperors' or 'Kings' of ancient Mexico and Peru, the writer has therefore used the terms Tlatoani and Apu-Ccapac-Inca, by which these chiefs were known among their people: instead of 'temple,' the Mexican words teopan and teocalli, or the Quichua word ccoricancha, as the occasion required. Instead of 'city' or 'town,' which conveys to the mind the idea of broad streets, and continuous lofty buildings, the Spanish word pueblo, sufficiently familiar to Americanists in connexion with the aboriginal ruins of Arizona and New Mexico, has been adopted. The older writers spoke of Peruvian 'sheep' and Mexican 'wine.' The llama is a small camel: pulque, the fermented sap of the metl plant, has nothing in common with wine except the property of intoxicating. These names now scarcely need explanation: the puma, ocelot, and jaguar are also sufficiently well known to admit of their proper names being used instead of 'lion' and 'tiger.' A short glossary of other Spanish and aboriginal words commonly used in the text is appended for the use of those to whom these terms may not be familiar. In general the received spelling

it will be remembered, is a guttural aspirate. The modern Otomi name of Mexico is Nbondâ, a word of uncertain origin.

of aboriginal words has been followed; in the case of those belonging to the Quichua language the spelling of the old missionaries has been adhered to in preference to adopting the modern phonetic system. In pronouncing these words the reader will bear in mind that the spelling is of Spanish origin; *qu* before *e* and *i* represents *k*, *hu* the English *w*, *x* the guttural *ch*; in Quichua the same sound is given to the intermediate *c* before a consonant, and to the final *c*, as in 'chacra' and 'Pachacamac.' The vowels are sounded as in Spanish: the accent is most frequently on the penultimate.

The writer gratefully acknowledges the kindness of those who have done him the great service of perusing his proofs or have assisted him with occasional suggestions: in connexion with the earlier portion of the present volume his thanks are due to Dr. Stubbs, now Bishop of Oxford, formerly Regius Professor of Modern History. In connexion with the Second Book, his acknowledgments are specially due to Colonel George Earl Church, and to Mr. Francis Claughton Mathews, M.A., of Caius College, Cambridge. Few possess so wide and so varied a knowledge of the New World as the distinguished American engineer first named; for the generosity with which he has placed his stores of knowledge at the disposition of the writer, and for the warm interest he has taken in the progress of the work, no expression of thanks could be adequate. For various useful suggestions the writer has also to thank Mr. William Edmund Currey (late Fellow of Trinity College, Cambridge), Mr. George Curtis Price (late Scholar of Trinity Hall), and Mr. Thomas Case (Wayntlete Professor of Moral and Metaphysical Philosophy in the University of Oxford).

E. J. P.

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GLOSSARY

OF

SPANISH AND ABORIGINAL WORDS.

acequia (Sp.). An irrigation channel.
aclla (Qu. pl. *acllacuna*). A girl 'selected' for the service of the huacas.
adobe (Sp.). A sun-dried mass of clay.
aje (Haytian). A cultivated root (p. 304).
Anahuac (Mex.). *Atl* + *nahuac* = 'By the water.' Originally only the valley of Mexico; now used to designate the Mexican plateau generally.
apu (Qu.). A chief.
Apu-Ccapac-Inca (Qu.). The sovereign chief of Peru.
ayllu (Qu.). (1) A rope. (2) A clan or localised kin.

balsa (Sp.). A raft or float.
barrio (Sp.). A separate part of a pueblo, inhabited by families having a common descent.

camayoc (Qu.). An official.
cancha (Qu.). A walled enclosure.
ccapac (Qu.). Great, rich, chief. The plural *ccapaccuna* denotes the Incas generally.
ccori (Qu.). Gold.
ccoricancha (Qu.). An enclosure containing sacred buildings.
chacra (Qu.). A field.
chian (Maya). An alimentary seed-plant (p. 384).
chicha (Mex., probably from Otomi). Fermented drink made from maize.
chichimecs (Mex.). Hunter tribes.
chilli (Mex.). The capsicum or Indian pepper (p. 367).
chinampa (Mex.). A floating garden (p. 242).
choclo (Qu.). An ear of maize.
coca (Aymara). A tree the leaf of which is used as a narcotic.
cohuatl (Mex., pl. *cocohuā*). (1) A snake. (2) A staff or stick.
Collao (Qu. from Aymara). The district of Lake Titicaca.
curaca (Qu.). The head of an *ayllu*: a chief.

huaca (Qu.). An object of worship (sometimes contrasted with *huiracocha*).
huanaco (Qu.). The llama (now restricted to the wild species).
huari (Qu.). A giant; stone-effigy; god of strength; peasant of the upper class.
huatana. See *inti-huatana*.
huauhtli (Mex.). 'Mexican wheat': a food-plant indigenous to Mechoacan (p. 320).
huillac (Qu.). 'Speaker': one who speaks with a huaca.
huillca (Qu.). An oracle or speaking huaca.
huiracocha (Qu.). A god of the highest class.

ichu (Qu.). The coarse grass of the Andes.
inca (Qu.). 'People of the Sun.' The ruling tribe in Peru.
inti-huatana (Qu.). The great horizontal sun-dials of Peru (p. 350).

lodazal (Sp.). A muddy stream.

maguey (Mex., probably from Otomi). See *metl.*
malqui (Qu.). (1) A piece of timber. (2) A mummy.
mama (Qu., pl. *mamacuna*). Mother.
metl (Mex.). The American aloes (p. 371).
mita (Qu.). Compulsory labour.
mitayoc (Qu.). A peasant liable to the mita.
mitma (Qu., pl. *mitmacuna*). A peasant transferred to another district, a colonist.
mocha (Qu.). The usual act of worship by putting the hand to the mouth.
montaña (Sp.). The forested eastern slopes of the Andes.

oca (Qu.). A Peruvian food-root.
octli (Mex.). The fermented sap of the metl (pp. 364, 374).
otomitl (Mex., pl. *Otomi*). 'Wanderer': one of the aborigines of Anahuac.

paccarisca (Qu.). Place of origin.
paco (Qu.). The smaller auchenia (incorrectly called alpaca).
pampa (Qu.). A plain.
pata (Aym. Qu.). A terrace (p. 339).
pinolli (Mex.). (1) Meal, (2) Porridge, of maize or chian.
pueblo (Sp.). An Indian town or village.
pulque. See *octli.*

quauhtli (Mex., pl. *quauhquauhtin*). An eagle.
quichua. The 'temperate' valleys of the Peruvian sierra.
quinoa (Qu.). A leguminous plant of Peru.
quipu (Qu.). Knotted cord used to assist the memory.

raymi (Qu.). (1) A dance: (2) a sacred festival.

sancu (Qu.). Maize porridge.
suyu (Qu.). A district or local division.

tampu (Qu.). A cave: a house: a collection of houses: a camp.
teocalli (Mex.). An elevated open chamber, within the teopan, containing the idol.
teopan (Mex.). The enclosure containing buildings dedicated to a god.
teotl (Mex., pl. *teteo*). A god.
tezcatl (Mex.). Polished iron-pyrites, used for mirrors.
tlaloc (Mex., pl. *tlaloquê*). A rain-god.
tlatoani (Mex.). 'Speaker': the chief of a Mexican pueblo.
totora (Aym.). The lake-reed of Titicaca.

yana (Qu.). Black. Pl. yanacuna, the landless class in Peru.
yunca (Qu.). Hot. The hot valleys of the coast or montaña (used especially of the former).
yuncapata (Qu.). The coast-district of Peru.

HISTORY OF AMERICA.

BOOK I.

DISCOVERY.

ARGUMENT.

After a brief indication of the main relations of the subject, the Discovery of America is described as an episode in the general history of geographical exploration, of slow birth, dependent on physical conditions, and involved in three separate historical processes: 1. the pursuit of the Greek idea that the east of Asia might be reached by sailing due west from Spain (Hispano-Indian hypothesis), which is discussed in connexion with the contemporary Greek idea of a plurality of *oikoumenai* or habitable worlds, and traced through Roman and mediæval thought until it reaches Columbus, in whose time the close relations which Europe was assuming with the East caused it to be tested; 2. the pursuit of Northward maritime exploration, and 3. that of Southward maritime exploration, the former by the Northmen, who first reach America (by them called 'Wine-land' and 'New-land' or 'Newfoundland') by way of Iceland and Greenland, the latter by the seamen of Spain and Portugal, who rediscover and colonise the island groups of the Atlantic, and come to a stop at the Azores, half way to America. This stoppage of island exploration, coupled with the discovery of the Trade Winds, and the belief in the existence of Atlantic islands yet undiscovered, contributes to force on the westward expedition. At length the Hispano-Indian hypothesis, as formulated by the Italian geographer Toscanelli, in 1474, is tested. Toscanelli's plan, as modified by Columbus, meets with acceptance in Spain: Columbus reaches the New World, which he supposes to be the eastern parts of Asia, in which belief he dies. The great extent of the lands thus reached is gradually ascertained: voyages of Americo Vespucci: second stage of American discovery, in which these lands are regarded not as part of Asia, but as part of a new geographical system, the most conspicuous feature in

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which is a vast island lying mainly to the south of the equator, to which an obscure printer gives the name of America. Discovery of the Pacific, and extension of exploration from Cuba. Third stage of the discovery, in which the supposed islands of Florida and Yucatan are ascertained to be part of the continent, and to be continuous with 'America' in the south, and with the 'New Land' of the Northmen, now revisited, and known as Terra de Baccalaos, in the north: the continent now ascertained to stretch without interruption to the Greenland seas. Transformation of the search for a Westward passage to India into a double search, for a South-west and a North-west passage. The former is discovered by Magalhaens, while the exploration and conquest of the interior are being commenced by Cortes, whose exploits are discussed in the following Book.

Function of History in relation to great historical facts.

THE history of America resembles other histories in being a narrative of facts set forth in an orderly series; but it differs from most histories in that the series is complete from the beginning. For the first time in historiography, we have here a great history traceable without break or obscure interval to a single great historical fact. When the Genoese seaman Columbus, in the year 1492, reached the islands of the Caribbean sea, he was unwittingly commencing a new series of human events. The consequences of his discovery are undoubtedly of greater moment than its causes and surroundings. But the great importance of its consequences has reacted upon the discovery itself. It began by throwing these causes and surroundings into the shade; but it has in the end excited a desire to have them extracted from their obscurity and properly elucidated and described. It often thus happens, that the most notorious and important events in history stand most in need of rational explanation. Great historical facts, as time lapses, tend to detach themselves from their causes, to escape from their surroundings, and to stand forth in the eye of the world with a prominence not properly their own. It is one province of history to restore them to their place; to link them with their causes, and subordinate them to their surroundings: for until this has been done they cannot be correctly conceived. To observe, to enquire, and to record, no longer make up the main function of the historian. Every year, as it passes, gathers its harvest of historical material: and since the invention of printing, with which the events here

treated are nearly coæval, history may almost be said to have recorded itself. The relative greatness and significance of the main facts in history are determined by a popular estimate, on which individual research and criticism can have but little effect. Without despising this popular estimate, it is the business of the historian to keep his own judgment clear of bias: to ascertain the direction of the main lines into which the perspective of history properly falls: to rescue from that vast mass of facts which naturally vanishes from observation any which may be necessary to fill up the interspaces, and to indicate those broken and forgotten threads, without which it is often impossible to unravel the obscure and complex tissue of human progress. Great historical facts stand in no danger of being forgotten: their greatness puts them in danger of being misapprehended. On the other hand, it ill becomes him who approaches historical facts of weight and magnitude, to see in them only an array of dry technicalities, or to conduct his investigations in a spirit of narrow and ungenerous criticism. The same sense of palpable greatness in the object contemplated, which excites the ignorant to idle enthusiasm, is necessary to inspire and sustain the scientific enquirer in his search after truth. Such a sense probably wrought as powerfully on a Bacon and a Newton as on the humblest of Nature's admirers: and it may safely be said that a true conception of history requires the mental eye to be rather dilated than contracted, and that the poet is nearer the true standpoint of the historian than the pedant and the antiquary.

Specially modern character of American history.

The examination of the events of American history is facilitated by the circumstance that they have taken place in the full daylight of modern times. In their place on the general scroll of history, they seem but matters of yesterday. They are the work of men whose habits of thought survive in our own generation. No history is so free from obsolete conditions: every one of the processes of which it consists is still proceeding. The developement of ocean navigation and the exploration of the less-known parts of the globe, the search for new channels of trade and the formation of

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colonies, the maturescence of these colonies into free nations and the evolution in them of social conditions which are distinctive if not absolutely new, the civilisation or extinction, as may happen, of aboriginal races, and the struggle of the great nations of the earth for predominance in the field which all these processes occupy, have not yet ceased. We yet stand in the midst of American history. We are provided with a complete view of its facts, and we stand in a meridian blaze of light by which to read their meaning. The enquirer can therefore have no excuse for reading that meaning erroneously: and the burden of his task is aggravated by the requirements of a scientific age.

History must be scientific.

The oldest and most generally interesting branches of human knowledge have during the past century undergone a transformation, which history has not escaped. The philosopher or the theologian can no longer secure a hearing by studiously avoiding the doubts and difficulties with which philosophy and theology are beset. On the contrary, he must endeavour to ascertain and to satisfy them. The general diffusion of a spirit of liberal curiosity forces him to recognise the unsolved problems of his subject, to give them a distinct shape, and to seek the conditions of their solution. The politician and the historian equally find that the world has discarded the part of a patient listener for that of an eager and obstinate questioner. Of history in particular it may be said that the modern reader demands the functions of a Sibyl rather than of a Muse. The mind revolts from a mere recital of facts, however undeniable may be their truth. It requires the proof and the interpretation of their significance. It seeks the causes which generated them, the means by which they were produced, and the ends and effects to which they have conducted. History has become primarily an enquiry into causes. The student of history seeks to classify causes as remote or immediate, single or manifold, primary or subordinate, and to gain a due conception of them as a whole, as a preliminary to an examination of their effects. The effect in most cases becomes in its turn a cause: and scientific history thus becomes a continuous

record of the genesis of events. In constructing this record it is natural that some errors should be made. But such errors will in time be amended: and it is better to have a living history, at the expense of some mistaken conclusions, than a dead narrative containing nothing that can be challenged or disproved. Such a living history it is the aim of this work to supply. If it fails to do so, it may at least facilitate the task in the hands of others.

America's place in history.

The law that the sagacity of man increases with the extension of the field of his enquiries[1] operates but imperfectly in the domain of politics and history. It operates with fewer impediments in the domain of physical science: witness the mighty change which physical science has undergone since the globe has been revealed to man in its full extent. But history yet lags behind physics. It is thus even when the field of observation is comparatively small and easy of access. Closely as Europe has been studied, and well as the system which regulates it is known, few would pretend to define with certainty the historical bearing of all the European facts which the past thirty years have evolved. Yet such facts constitute a problem less complex than those of the past three hundred years in America. In the case of Europe, the narrow territorial delimitation and mutual jealousy of the powers which share it, the constant strain of their forces, whether in diplomacy or in war, and the weight of centuries pressing on the structure of society, lend to the speculations of the observer a certain degree of probability. In the case of America, the speculations of the keenest observers have been repeatedly falsified[2]. The reason is obvious. Though the world has

[1] This fine generalization of Humboldt's was suggested by Schiller, Prologue to Wallenstein:—

'Im engen Kreis verengert sich der Sinn,
Es wächst der Mensch mit seinen grössern Zwecken.'

[2] I need hardly instance the belief of Hegel and Humboldt in a great impending collision between the Northern and Southern continents: the belief, so widely spread among shrewd and well-informed English politicians, in the inability of the Northern States to crush the great Slavery Rebellion, and to maintain the Union: and the belief, equally ill-grounded, but not so completely refuted, in the universal degeneration and decay of the Latin states in South America. The illusions of American history would form a curious subject of

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plainly before it the incidents of American history, it is yet learning to understand America. So huge a social and political creation developes by slower stages, and its developement attracts observation by slower degrees, than anything to which we have hitherto been accustomed. Reversing the order of things in the animal world, the mammoth of history has been created last. For the present, we are watching its gigantic youth. Rash indeed were he who should pretend to forecast its maturity. The wisest observer will here be the most cautious: and the writer ventures to substitute for any preliminary generalisation of his own a well-known conclusion reached by an English philosopher a century and a half ago. It is true that this conclusion needed no high degree of invention or acuteness, and that it derives its main interest from the form with which it was presented, and the circumstances which gave it birth. Every one knows the stanzas in which Berkeley characterised the growth of a new Europe on the Western Continent, and the recent planting of the arts and sciences of Europe in this virgin soil. He described this process as the last and greatest act in the great historical drama of the world[1]. After the lapse of a century and a half, this approximate indication of America's place in history remains alike unshaken and unverified. The fact may illustrate the difficulty which besets him who seeks to elevate American historiography above the stage of chronicle-writing. While the slow march of change in so huge and multiform a body eludes observation, the mere contemplation of its size and multiformity bewilders. The mental eye can only take in its vast members singly and successively.

investigation. Geographical illusions, such as the Terra Australis, historical illusions, such as the Mound-builders and the civilisation of Mexico, and political illusions, such as Imperialism in Spanish America, lend a quaint light and shade to American historiography.

[1] 'Westward the course of Empire takes its way:
The four first acts already past,
A fifth shall close the drama with the day:
Time's noblest offspring is the last.'

These stanzas, which cast a light on American history which may be compared with that thrown on Roman history by Virgil, Aen. vi. 848, &c., will be discussed as a whole in a future place.

The labour of apprehending all that each indicates is exceeded by that of combining the whole into anything at once probable and intelligible: and overwhelmed by fatigue and uncertainty, the enquirer may be pardoned, at least in the earlier stages of his task, for relapsing into a position of vigilant scepticism. The more precise indication of America's place in history is therefore deferred.

Changes through which the conception of America has passed.

The difficulties, however, which result from the complexity of the object of enquiry have been of gradual growth. They are scarcely felt in the first stage of American history. During nearly a century, while the domination of Spain is as yet unshaken, America remains a simple conception whose meaning is unfathomed, a symbolic quantity, whose value is unascertained. It is true that the great continent in another hemisphere, for centuries the dream of the cosmographer and the poet, has been proved to exist, surveyed, and partly occupied. But it is contemplated through a haze of romance and uncertainty. Europe as yet scarcely knows itself, much less this new and vast dependency. Europe itself is as yet in a state of flux. In all its parts there are changes at work, which give new impulses to its complex forces. The balance gradually settles itself: but it takes time for the settlement to extend to the New World. At length, while Bacon is pondering over the reconstruction of human knowledge, it becomes apparent that the age in which America has been a mere episode in the annals of Spain is at an end. From the beginning of the seventeenth century it belongs not to Spain but to Europe. Spain has proved to be a giant with feet of clay: and in the two centuries which follow, disturbing elements rise thick and fast upon the scene. Every European people, except paralysed Germany and Italy, turns an eager eye on the shores of the New World. America becomes a group of detached settlements. Romance and conquest give place to history and colonisation. The simplicity which has hitherto prevailed seems to pass away. The geographical unity vanishes in the social variety which fixes the attention: and the difficulties which beset the enquirer steadily increase, for the lines on which the history of the colonies

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is evolved are multifarious and obscure. The fierce struggles of the old world are fought also in the new: strange forms of social life appear, which rapidly spread their effects around them: the new world becomes more and more important in the eye of Europe, and more difficult to estimate and understand. At length unity reappears in an unexpected form. A new Europe has grown up unawares in the west; and this new Europe suddenly asserts its independence of the old. English America, which has long been prominent in American history, leads the way: the rest of the colonial world follows as opportunity offers: and in half a century America has become a vast group of republics, of varying size, character, and importance, affording the richest mine of social research, and the widest field of historical speculation, that the world has known since the fall of Rome. The object of enquiry has thus grown from an obscure symbol to a connected group of large and definite political combinations: America has become a new and a greater Europe. To trace one by one the steps by which this mighty change has been wrought is the task of him who aspires to be the historian of America.

Europe and America.

It is no small or easy matter to write the history of America: and in describing the magnitude and difficulty of the task a volume might be occupied. Some may fairly think it presumptuous on the part of a dweller in the old Europe to attempt that great and difficult task. For this presumption but one excuse is offered, namely, that the History of America is the Epic of Europe. It is our Iliad. An Englishman may justly say this in another sense: for the noblest part of the History of America is the Iliad of England. Many causes have combined to induce those interested in American history to treat it as a separate and independent branch of historical enquiry. During the past century such a view has naturally become more and more common, and the tendency of historians has been to seek the material of American history exclusively in strictly American incidents. To cut the New World adrift from the Old at all its moorings, and to begin a new course and

a new reckoning, is unquestionably a short and easy method. But decision is not to be facilitated by narrowing the field of evidence[1]. Unity, picturesqueness, and convenience of treatment may thus be secured; but, in the belief of the writer of the present work, at the expense of accuracy and completeness. One of his main purposes will be to exhibit the incidents of American history by the light of contemporary incidents in Europe. It will be assumed as a postulate that an interdependence and a substantial connexion have from the beginning existed between the Old World and the New, and have been important factors in the history of both[2].

Relation of American history to other histories.

To indicate the general relation which American history bears to other histories is easier than to mark its precise points of contact with them. A historical gulf of about twenty-five centuries separates the age when Asiatic adventurers discovered and in part colonised the shores of Europe and Africa from the age when European adventurers discovered and in part colonised the shores of America. The history of these five-and-twenty centuries is the history of the Old World. The latter half of these five-and-twenty centuries was occupied by a great composite process which is conventionally known as the Decline and Fall of the Roman Empire. When America was discovered, this process had terminated. The mediæval world had passed away, and the modern world had taken its place. From this point, the highway of history ceases to descend, and begins to ascend: and this change has by general consent been taken as the beginning of strictly modern times. The history of America forms part of a great Rise and Progress, which follows immediately and indivisibly upon the great Decline and Fall. Properly viewed, the history of America is the history of the share which America has taken in this Rise and Progress, first as a dependent element, slowly

[1] Aristotle, De Gener. et Corrup. i. 2.

[2] 'No writer has as yet disregarded the fictitious boundary-line of the Atlantic, and given us the Old and New World in the same picture—the action of Providence working through physical laws and human nature on America and Europe contemporaneously.' Viscount Bury, Exodus of the Western Nations, vol. i. p. 9.

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exerting a faint influence on the central forces of the Old World, and afterwards as an independent element, ever making a substantial influence more and more strongly felt. To gain a clear and correct view of American history, the general contemporary state of the Old World must be constantly kept in view. It becomes distorted and meaningless if it is separated from this connexion.

Distribution of the Work.

In reducing the vast landscape of American history to the limits of a narrow canvas, some departure from the methods usual among historians of America will sometimes be inevitable. Some parts must be elaborated more fully, others touched more lightly: nor in such a task is it possible to look far ahead. The general direction intended to be taken by the writer may be indicated as follows. In the first place, it will be explained how America came to be discovered. The history of the Discovery, though strictly belonging to the history of geographical science, has more connexion with the ultimate destinies of the New World than might at first sight appear. It will therefore be told at some length. That the fruit of so great a discovery should have immediately appeared was not to be expected: and accordingly nearly a century elapsed before American history began to assume its natural shape and direction. The history of this first century, though mainly marked by the predominance of ideas rather mediæval than modern, and characterised by misapprehension, ignorance, and neglect, will disclose some faint shadows of coming change, growing deeper and more prominent as the century nears its close. The change thus foreshadowed actually takes place: and with the seventeenth century the balance of power in America begins to pass from the Latin to the Teutonic nations of Europe. A boundary is agreed upon between the two: the growth of Teutonic colonisation receives fresh impulses from home: the supremacy of the English in this field is established: colonisation enters upon a new and scientific phase: and with the eighteenth century American history reaches its last stage but one. This is the rivalry of England and France. When the die is cast, France loses: and the whole continent of the New World

seems for a while to lie at the feet of England. Then follows suddenly the era of independence: the colonial supremacy of Europe is broken by a series of tragic surprises; and after a struggle which in different parts of the New World lasts during half a century, and is contemporaneous with the most momentous struggle on record in the Old World, the first act of a great historical drama closes, the old colonial system comes to an end, and the history of Independent America begins. The continuous growth of English America, which even hitherto has been the main fact in American history, now acquires an entirely new significance: and the New World enters on its destined function of giving to the European race, and especially to its English member, an effective predominance in the balance of power on the globe. Such, in rude outline, is the scope of the present work.

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The writer reserves, each for its proper occasion, the generalisations on which he mainly relies for the explanation of those difficulties with which the story of the New World abounds. They would in general gain nothing by being removed from their places, nor are they capable of being advantageously presented in a summary form. An exception may be made in a single case. It has been already remarked that the element destined to give the Discovery of America its due weight and effect in history was at the time of the Discovery not yet ready to come into operation. That element, which I will not attempt here to define, grew up with the decay of mediæval monarchy, and the rise of a national spirit and sentiment, in those countries where the strongest reaction took place against the Catholic domination of Spain. The New World and the East were each alike reached by a mediæval monarchy. The stronger of these monarchies had scarcely devoured the other, when the rich spoils of the East and West were grasped and held by free peoples, whom its tyranny provoked successively to resistance and to rivalry. Spain and Portugal were thus unwittingly the cat's-paws of England and Holland. The Latin adventurer sowed the seed, but the Teuton reaped the harvest. Romance and

Relation of Book I to Book II.

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neglect fill the annals of the former: and the first century of colonial history may be described as a period of slumber. Unable to apprehend the extent and significance of this new revelation, Europe beheld it as in a dream. The fact of the discovery had to exhaust the imagination before it could encounter the active transforming force of the practical intellect. Some of the misconceptions engendered in this process are hardly yet extinct. Among them survives that which not unnaturally regarded the Discovery as a thing to be contemplated apart; in Baconian phrase, as an *instantia monadica*, co-ordinate with nothing else, and forming a solitary species in nature, to be judged and measured by itself alone[1]. That such a conception should arise at the time, was to be expected: what is extraordinary is that it should survive the period when the event passed into the domain of history[2].

The Age of Discovery. The Renaissance.

The unique grandeur of the discovery of America naturally leads the mind to regard it as a vast species by itself. Such a view history obliges us to reject. Great as it was, it was only the greatest in a long series of great discoveries of the same kind. This long series of cognate discoveries is closely interwoven with other threads of historical fact which are of equal importance for the history of humanity. Long before Columbus reached America the age in which he figures had entitled itself to be called the Age of Discoveries. With the thirteenth century the long intellectual slumber of Europe began to be broken. The fourteenth, fifteenth, and sixteenth centuries witnessed a long series of bold nautical ventures, which gradually reopened the globe to European knowledge and enterprise.

[1] Bacon, Nov. Org. ii. 28. The commonplace of the early Spanish writers, that the Redemption of mankind on the Cross is the only fit historical parallel to the Discovery of America, may serve as an illustration.

[2] Other instances of the survival of mere contemporary impressions, in what has hitherto passed as American history, will occur in the course of the work. The fallacy and the difficulty of characterising it are well described by Bolingbroke: 'The events we are witnesses of appear to us very often as original, unprepared, single, and unrelative, if I may use such an expression, for want of a better in English: in French I would say *isolés*: they appear such, very often, as are called accidents, and looked on as the effects of chance.' Works, 4to. ed., vol. ii. p. 279.

To this movement, which some historians have denominated the *Maritime Revolution*, the discovery of the western continent belongs[1]. These great geographical discoveries were accompanied by a far wider circle of other discoveries: discoveries in science, in morals, in politics, in the useful and the fine arts. The whole cycle of these is commonly called the Renaissance: and properly to understand the discovery of America we must conceive it as a member of that great process in which half-dead Europe regained consciousness, and which it was little exaggeration to describe as birth into a second and greater life. And conversely, if we wish to grasp the full meaning of the Renaissance, we must turn from Europe and fix our gaze upon the New World. The greatest fruit of the Renaissance was America.

Fortunes of Geographical Science.

The fortunes of nautical discovery and geographical science have always followed the fortunes of general culture with curious exactness: and their history aptly illustrates the great march of the human mind from ignorance to science. A rude conception of some irregular patchwork of sea and land sufficed for Hamitic and early Semitic man. The Assyrians first distinguished between a great sea in the West and a great sea in the East[2]. The Phœnicians took advantage of the polarity of the north star, explored the great sea of the West, ascertained that it was bounded by two continuous coasts, as by the banks of a river, bestowed on these coasts designations which yet survive in the names of Asia and Europe, and guessed the great sea of the East to be a continuous mass of waters encompassing a flat circular earth. Such are the cosmographical conceptions which are met with in Homer and in the Holy Scriptures[3]. The conception of a spherical earth, the basis of true cosmography, belongs to the birth of exact science in Greece: and the science of geography, rising into existence first through piracy and

[1] In default of an English work dealing critically with this important movement, see Peschel's Zeitalter der Entdeckungen, 1858.

[2] Bagster's Records of the Past, vol. i. p. 45.

[3] Iliad, xiv. 245; xx. 7, &c.; Isaiah xl. 22.

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then through commerce, after about 500 B.C. developed widely with the growth of astronomical observation and of mensuration. It was extended eastwards through the expedition of Alexander, and rose to its greatest height under the Ptolemies. The Romans continued the work. Their conquests extended discovery, both north and south, in the century before the Christian era, and in the time of Augustus the knowledge of the globe was at its greatest height. During the first two Christian centuries geographical science was at a stand-still. Even Pliny laments the cessation of discoveries. For six centuries, between the years 180 and 800, this cessation was absolute. With the decay of all the arts and sciences among the cultivated nations of Europe, geographical science also decayed; and the task of its reconstruction fell to other hands. The Northmen and Arabs revived discovery between 800 and 1200: and with the thirteenth century the newly-formed nations of Europe began to compete with them. Italians, Portuguese, Catalonians, Biscayans, Bretons, Normans, English, and Flemings, vied with each other in extending navigation. An ever-widening wave of exploration now gradually opened the whole of the Old World: traffic followed in its wake: and by the end of the fifteenth century the world was in a certain sense ready for the great secret that was at last about to be revealed [1]. It was ready for the secret as a scientific discovery. But it was not ready for it as a political fact: and America, so far as Europe was practically concerned, was discovered about a century too soon.

Place of the Discovery in the History of Geography.

This revival of geographical discovery, like most similar processes, began slowly, but advanced rapidly to its conclusion. The discovery of America was its turning-point. Between the first discoveries in the Atlantic and the discovery of America there elapsed a century and a half. During this time nothing had been discovered but a few insignificant island-groups in the Atlantic. But the discovery of America had in half a century forced on the circumnavigation of the globe, and led to a theory of the

[1] Lelewel, Kleinere Schriften, 7–9.

configuration of its surface which was good enough to last almost undisturbed down to the time of Captain Cook. Until the time of Columbus, and indeed for some time afterwards, the new discoveries had been regarded as supplementary to the Ptolemaic cosmography. His voyages in the end caused this antiquated system to be suspected: and those which followed rapidly brought it into total discredit. When the Atlantic had once been crossed, and the isthmus of Darien explored, men were not likely to rest until they had penetrated the mysteries of the Pacific, and realized the Columbian dream of sailing to the east by way of the west. The discovery of America may thus be described as the lever which overthrew the old cosmography. At the proper place in the course of this history it will be pointed out that this lever did a far greater work: that the destruction of the old cosmography fell in aptly with contemporary suspicions of the old philosophy of nature, and that the discovery of the New World furnished the principal hints for the reconstruction of the intellectual world by the immortal Bacon.

Slow birth of the Discovery.

In the present First Book I propose to show how, in the course of this general process of discovery, America came to be discovered: and how it was that it did not come to be discovered sooner. Without stopping in all cases to indicate the false beliefs which exist relative to the discovery of America, I shall endeavour to tell the main facts of the story, stripped of the artificial halo with which they are sometimes surrounded, removed from their traditional historical isolation, and restored to their natural historical setting. In its conception the Discovery was no sudden flash of genius; in its effects it was no historical earthquake, startling the world, and working instant changes in the relations of its peoples. It wrought out its results by degrees which though regular and certain were scarcely perceptible. In this First Book I shall endeavour to show that it was of slow birth. In the Second Book I shall show that it was equally slow in disclosing the very beginnings of those great results which ultimately followed. In the next book I shall trace the gradual and laborious advances

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which were made upon those beginnings, and show how it happened that two centuries elapsed before the Discovery was in the way of producing its full effect. In the slow birth of the Discovery we shall be tracing a series of steps bearing a close resemblance to those which have preceded great discoveries in physical science. A remote and obscure conjecture has been alternately trifled with and thrown aside. Centuries have passed, and it has suddenly arrested some penetrative eye. A happy inspiration has then divined the truth: circumstances have facilitated its demonstration, and man has gained one more step in his struggle for the conquest of nature. Such has been the case with most discoveries which have wrought epoch-making changes in human history[1].

Dependence of the Discovery on Physical Conditions.

The present generation has witnessed praiseworthy efforts to connect historical phenomena with that great system of law which dominates all nature. It is confessed that such efforts have been only partially successful: and the fact probably is that historical phenomena should be ranked in a gradually varying series, at only one extremity of which the reign of law can be absolute and supreme. In proportion as merely physical facts enter into the matter of the case, do historical phenomena tend to place themselves in this law-dominated extreme. The science of geography, among others, embraces a wide circle of physical facts bearing directly upon history. The migrations of peoples in all times, wars in all their kinds and in all their details, the growth and break-up of empires, the production and maintenance of the balance of power among groups of nations, are instances of historical facts largely affected by geography: and to the same class obviously belong, in a yet higher degree, the incidents of

[1] 'When we examine more clearly the history of such discoveries, we find that these epochs have not occurred suddenly and without preparation. They have been preceded by a period which we may call their Prelude, during which the ideas and facts on which they turned were called into action; were gradually evolved into clearness and connexion, permanency and certainty, till at last the discovery which marks the epoch seized and fixed for ever the truth which had till then been obscurely and doubtfully discerned.' Whewell, Hist. of Inductive Sciences, vol. i. p. 13.

maritime discovery. The case of America amply bears out the inference. Were all historical facts of the same kind, the history of the Discovery might rank among the leading illustrations of the theory that history may be predicted from its preceding conditions.

Balance of physical conditions against discovery of America from Europe.

The winds and currents of the North Atlantic in the latitude of Europe are more favourable to a discovery of Europe from America than to a discovery of America from Europe: and had the shores of the United States been early peopled by an ocean-going race the incidents of the discovery must have been reversed. Both winds and currents, as a glance at an ordinary seaman's chart will prove, set directly from the American shores to the coasts of Spain, France, and the British Isles: and sailing ships proceeding from Europe to a corresponding latitude in America are therefore obliged to take a circuitous route, either to the northward or the southward. Not only do westerly winds prevail during the greater part of the year in Western Europe, but their mean force is three times as great as that of the occasional winds which blow from the north and east[1]. Alike unfavourable to western adventure, in these seas, though in a less degree, is the constant drift, upon the European shore, of the great ocean current known as the Gulf Stream. Trunks of pines, carved wooden implements, and branches of tropical plants, incessantly drifted by this current upon the shores of Europe, were ever suggesting to its inhabitants the existence of some unknown land over the ocean: but nature had barred the doors of westward discovery. Northward and southward, the doors lay open: and the western world was therefore not discovered by direct westward exploration from Europe, but circuitously, by the prolongation of the paths of northern and southern discovery.

Three great natural highways from Europe to America.

North and south of the latitude of Europe, the balance of physical conditions lies greatly the other way. It is favourable to the discovery of the New World from the Old: and the crossing of the Atlantic depended solely on the progress of navigation among the various peoples

[1] Purdy's North Atlantic Memoir, 12th ed. by Findlay, p. 212.

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occupying its European shores. A glance at an ordinary seaman's chart will show that there are three ways or channels, and three only, in which Europe could have approached America. In each of these ways or channels, this effect was actually produced: and the present book will merely show how European adventure entered upon these three natural highways from the Old World to the New. Beginning with the northern hemisphere, the chart discloses, FIRST, THE GREAT ARCTIC CURRENT running southwards from Davis's Straits, carrying with it the waters around Greenland, and sweeping southwards along the North American shore, until it disappears before the more powerful Gulf-Stream; SECOND, the mighty force of the TRADE-WINDS, produced by the combined action of the sun's heat and the earth's diurnal revolution, blowing westwards between the tropics all the year round, north of the equator tending to the south-west, south of the equator to the north-west; and THIRD, THE GREAT EQUATORIAL CURRENT, sweeping with the Trade-winds from the shores of Africa to Brazil and the estuary of the Amazon. These three great physical forces are in fact three roads which the terrestrial system has evolved to lead Europe to America. Any one acquainted with these three physical facts might safely have predicted such a result, and almost fixed the time of its accomplishment. The first of these highways would be reached as soon as northern adventure reached the coasts of Greenland. Unless northern adventure were checked by other causes, a short time only would elapse before the great Arctic current led it to America. The second of these highways, the grand highway of the Trade-winds, would be reached as soon as the adventurers of the Spanish peninsula, ever exploring farther and farther seawards in the Atlantic, as well as coastwards around the continent of Africa, had passed the tropic of Cancer and reached the islands of Cape Verde. Unless their adventure were checked by other causes, they would in time seek to avail themselves of the Trade-winds to reach the long-sought shores of Asia. The third of these highways would be reached soon after-

wards. As the adventurers of the Peninsula advanced farther and farther south and west in the southern hemisphere, the great equatorial current, aided by one of those hurricanes that so often follow it, could hardly fail to seize upon some one of them and cast him on the shore of Brazil. We might therefore reasonably anticipate three different sets of historical incidents, each corresponding to one of these great physical causes, and each leading to a Discovery of America. Now these three sets, and no more, of historical facts, each leading to such a discovery, have actually taken place. Before describing them, let us take notice that among these three great physical causes one stands out with commanding prominence. The currents of the ocean are but a secondary element in Atlantic navigation: the winds, until the era of steam, were its sole support. The winds, says Bacon, have added wings to the human race[1]. The mighty Trade-winds did this in a transcendent sense. They invited the European navigator to make an advance *per saltum*, and at one bound to cross the Atlantic: and we shall find that the historical facts corresponding to this pre-eminent physical fact stand out in an equal degree of importance among the general mass of incidents which lead up to the history of the New World. These physical conditions being premised, let us lay them for a while aside, and trace separately the growth of the human enterprise which employed them.

Processes which involved the Discovery.

The earliest promise of a New World must be sought far back in the story of the Old. The seeds of the discovery of America may be said to have been sown by the hand of destiny in three different fields: and in each of these different fields they had taken fast root. In other words, that discovery was a point sure to be reached in the course of three separate sets of successive facts, or *historical processes*; and each of these processes had been long going on, from a more or less remote date, when the great discoverer of the fifteenth century was born. I speak of historical processes, not in any affected or pedantic sense, but because it is not easy to express otherwise the fact that

[1] 'Venti humanae genti alas addiderunt.' Hist. Ventorum, Praef.

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different men in successive generations were continually working towards the same end in different ways. One of these processes had long passed the point of actual discovery. Another of them reached the point of discovery independently of the method of Columbus, a few years after the great feat of Columbus had been accomplished. Of another process Columbus is himself the exponent. Partly on this account, and partly because this process differed in kind from the others, had been longest going on, and was most widely extended, I shall describe it first.

Nature and Connexion of these Processes.

The three processes, in each of which the discovery of America was involved, were these. FIRST, GENERAL ENQUIRIES INTO THE GEOGRAPHICAL RELATION OF WESTERN EUROPE TO EASTERN ASIA. Such enquiries had followed as a matter of course upon the great Greek discovery of the sphericity of the earth: and the historical process which they constitute began in the time of the Pythagoreans. It received a new stimulus under the Roman Empire: it sank into nothing during the dark ages: but it was revived with new vigour after the thirteenth century, when the attention of Europe became once more strongly directed towards India. SECOND, THE GRADUAL EXTENSION OF NORTHWARD EXPLORATIONS, FROM THE NORTH AND BALTIC SEAS, by way of Iceland, Greenland, and Labrador. This process, which began in the time of the Romans, was carried on with new spirit by the Northmen in the time of Alfred the Great. It produced an undoubted discovery of America by Europeans, four hundred years and more before Columbus was born. THIRD, THE GRADUAL EXTENSION OF SOUTHWARD EXPLORATIONS, FROM THE SHORES OF THE MEDITERRANEAN, AMONG THE ISLAND GROUPS OF THE EASTERN ATLANTIC. This process, which is intimately connected with the southward exploration of the African coast, began with the voyages of the Carthaginians. It revived with the rediscovery of the Fortunate Islands of the Ancients, in the fourteenth century. It ceased when the island groups of the Atlantic had been explored: and this cessation,

as we shall see, precipitated the enterprise of Columbus. It had, however, a second and more direct effect: for it produced another Discovery, a few years after America had been reached by Columbus: and this discovery would have been made though Columbus had never been born. All these processes thus belong to classical antiquity, though their revival and pursuit to the stage of discovery belongs to modern times. The first process belongs to the dawn of Greek science. The second belongs to the dawn of empire, in the hands of the Romans. The third belongs to the dawn of commerce, in the hands of the Carthaginians. The first process was merely theoretical. The second and third consisted of actual historical incidents, and are distinctly traceable, as we shall presently see, to the peculiar configuration of that great Asiatic peninsula which is called Europe.

First Process.

The reader will at once see that each of these three processes bears a plain and unmistakeable relation to one of the three physical facts which have been enumerated. The most important among the physical facts corresponds to the most important among the historical processes. Philosophical speculation urged human curiosity to disprove or verify its surmises by penetrating the Atlantic. Man wandered farther and farther, until he chanced upon those perennial winds which are generated by the earth's daily revolution. During untold millions of years they had uselessly spent their force on the waste of waters. Across that waste they soon carried a bold explorer at a single venture, and were thereby transformed into a regular highway leading to a new world.

Sphericity of the Earth.

The first process, which tended to realise what may be called the Hispano-Indian or Columbian idea, was naturally suggested by the discovery of the sphericity of the earth. This grand discovery laid the first base for the science of astronomy. To this day, the first task of the student of that science is to apprehend the earth's sphericity in all its bearings: and both celestial and terrestrial cosmography thus trace their historical beginnings to one and the same source. The doctrine even of philosophers before the time of

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the Pythagoreans, and of the vulgar long after[1], was that the earth is a flat round disk floating in ocean. The apparent dip or inclination of the earth's surface towards the sun was accounted for by supposing this disk to be less deeply submerged on its northern than on its southern side. Near the centre of this disk were the centres of civilisation, Egypt, Greece, and Phœnicia, grouped round the Mediterranean Sea. On its circumference were the Fortunate Isles, Elysium, Ethiopia, and the land of the Hyperboreans. Such was the belief of Homer: such also was the belief of Herodotus, save that the latter believed the circumfluent ocean to be an Homeric fiction, and that the disk of the earth really terminated in space, the seas lying on the top of it, as water lies in a dish. Anaxagoras, among whose scholars were Pericles, Euripides, and Thucydides, was of the same opinion. These errors were dissipated by the discovery of the sphericity of the earth, suggested to the Pythagoreans by observation of eclipses, and by the varying meridian altitude of the stars. That discovery did not disturb the belief in the identity of the western and eastern seas, which was involved in the Homeric conception of one circumambient ocean. The ancient conception of a Periplus, or coasting voyage around the disk of the *oikoumenê*, still survived. It was still not impossible that the same sea which lay outside the Pillars of Hercules might also wash the eastern

[1] In Pliny's time the sphericity of the earth had not won general acceptance 'Ingens hic pugna literarum, contraque vulgi' (N. H. lib. ii. c. 65). Tacitus entertained the vulgar belief, as is clear from his theories as to the origin of the amber found on the shores of the Baltic (Ger. c. 45), and as to the luminous nights in the north of Scotland (Agr. c. 12). Such expressions are sometimes due to literary licence, as in the lines of Dryden (Annus Mirabilis), to whom belief in the ante-Pythagorician cosmography will hardly be imputed:

> 'Then we upon the globe's last verge shall go,
> And view the ocean leaning on the sky:
> From thence our rolling neighbours we shall know,
> And on the lunar world securely pry.'

Geographical fictions are often thus perpetuated. That of the uninhabitability of the torrid zone, exploded by Eratosthenes and Polybius, was gravely repeated by Tibullus, Virgil, Horace, and Ovid. A passage in Lucan (Phars. x. 624), to the same purport with the theory of Tacitus, may be thus explained.

shores of India. In that case, the earth being spherical, it would be possible to sail from the one shore to the other by two diametrically opposite routes. This belief guided Columbus in his great undertaking; and in the time of Columbus it had been in existence for nearly two thousand years. Though until the time of Columbus no one succeeded in testing it, it was never lost sight of: each succeeding age renewed the belief that whenever navigation should be sufficiently advanced, it would be possible to sail from Spain to India by two routes, a western and an eastern.

Tendency to Westward Exploration.

In order fully to understand the process which thus began, we must make a step backwards in the world's history. The tendency to nautical explorations proceeding ever farther and farther towards the west belongs to the dawn of European civilisation. In the eastern end of the Mediterranean that civilisation had its beginnings. When the ideas of the Phœnicians and the Greeks began to overleap the horizon of sense, geography determined their direction. It was in the West, across the Great Sea, that the merchant pushed his ventures, and the emigrant founded his colony. Long before men conjectured the earth to be spherical, exploration in what was for them a vast and romantic field had given them experience in navigation, and hope of discoveries: and thus from the earliest times human activity has been stimulated by westward adventure. A law of nature has drawn man towards the setting sun, as the needle is drawn towards the pole. What the strange lands that lay westward over the Atlantic have been for civilisation in its maturity, that the strange lands that lay westward over the Mediterranean were for civilisation in its infancy. It was the wealth of Tarshish, the Mexico and Peru of antiquity, that supplied the Phocæans with the means of resisting Persian aggression. When Phocæa was conquered by the Persians, they emigrated in a body to Corsica, an island of the West. The relics of this colony became the beginnings of the great city of Marseilles. When all the Ionian cities fell under the same yoke, it was in Sardinia, another island of the West, that they contemplated the erection of an united Ionian state. When the

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Hebrew prophet fled from the face of the Lord, it was in a ship bound for Tarshish that he took refuge: and when another Hebrew prophet foreshadowed an approaching golden age, in which the ancient commonwealth of the chosen people should be restored in all its glory, the foremost feature in the vision is the pouring towards Zion of all the abundance of the sea, the ships of Tarshish, flying from far 'as a cloud, and as the doves to their windows,' and bringing with them their silver and their gold[1].

Plurality of *oikoumenai.*

When explorers had passed the Pillars of Hercules, this westward current was temporarily checked. The shore was found to trend north and south, and to be washed by an apparently illimitable ocean. As a similar ocean was known to exist in other directions, a simple induction led men to conclude that the inhabited world was really one vast island. The sphericity of the earth next entered into the calculation. Conceptions so different as that of the flat insular mass of which the habitable world, by the testimony of observation, consisted, and that of a sphere suspended in mid air, were only to be reconciled by supposing the former to be comparatively small, and the latter comparatively immense. When the foundation was thus laid, it was easy to build upon it. The logical Greeks at once argued from the existence of one such island to that of others, and conjectured the existence of a plurality of habitable worlds[2]. Aristotle was apparently the first to construct a geographical theory involving the existence of America,

[1] Herodotus, Clio, 163-170; Jonah, ch. i; Isaiah, ch. lx. The course of discovery in the Mediterranean apparently followed its geological formation. It originally consisted of three distinct basins, the Ægean, the Syrtic, and the Tyrrhenian. The last and most westerly was unknown to the Greeks in the time of Homer, and was first opened to them by the Phocæans. See Humboldt, Cosmos, vol. ii. p. 481 (Bohn's translation).

[2] In the place of this inexact expression, and in default of an English word I take leave to use the Greek term *oikoumenê*, which denotes any considerable portion of the earth's surface, whose parts intercommunicate, but which is isolated from the rest of the world by the ocean. In historical times, there have been only three actual oikoumenai: that of the Old World, including Europe, Asia, and Africa; that of the West, America; and that of the South, Australia. The whole world now practically forms a single *oikoumenê*.

and to guess a truth the knowledge of which would perhaps have stopped all the plans of Columbus. He guessed that the Old World or *oikoumenê* was only one of several greater or lesser continents cropping up out of the ocean. 'In common speech,' he says, 'we speak of our world (*oikoumenê*) as divided into continents and islands. This is wrong. The *oikoumenê*, as known to us, is really a single island, lying in the midst of the Atlantic. Probably there are other similar *oikoumenai*, some larger than ours, some smaller, separated from it by the sea[1].' One of these supposed *oikoumenai* Aristotle conjectured to form a Terra Australis, or *oikoumenê* in the southern hemisphere, separated by the sea from Africa; and thus did the great father of science conjure up a vague geographical phantom which took various forms up to the time of Cook, who reduced it to certainty a century ago[2]. This conjecture rested ultimately on the groundless belief that the known *oikoumenê* terminated somewhere to the north of the equator, and that the equator lay wholly in the ocean. A great continent to the south of the equator was a natural corollary to the doctrine of the plurality of *oikoumenai*: and the belief in a symmetrical cosmical arrangement including an *oikoumenê* beneath each pole survived down to the explorations of the Infant Henry of Portugal in the fifteenth century.

Hispano-Indian or Columbian hypothesis.

From the above passage it is obvious that Aristotle may be said to have believed in some kind of America, and in some kind of Australia. This belief, of course, rested on no certain knowledge. And in the true spirit of a philosopher, Aristotle admitted that the northern hemisphere might perhaps contain but one *oikoumenê*, namely, the old world. In this case, he did not disapprove the notion that the two ends of the *oikoumenê* might possibly be no great distance apart. It was upon this notion that the belief of Columbus was based. It was not originated by Aristotle, though his authority was often attributed to it,

[1] Aristotle, De Mundo, cap. 3. The treatise, though now condemned as spurious, represents the opinions of the original Aristotelian school.

[2] Meteorologica, ii. 5. The supposed Terra Australis surrounding the south pole, and separated by a strait from South America, as Africa is separated from Spain, was invented by the astronomer Schoner in 1515.

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because it was found in one of his treatises. This bold conjecture survived for nearly two thousand years, and was only to be disproved by the discovery of America.

Observations of Aristotle on the Hispano-Indian hypothesis.

The earth, reasoned Aristotle, is clearly spherical. It is, moreover, a sphere of no great size: otherwise, the meridian altitudes of the stars would not vary at distances so short. The opinion of those who believe the region of the Columns of Hercules to be connected with the region of India, and thus assert the unity of the ocean, is therefore not wholly to be rejected. Among other indications, they say that the elephant species is to be found in both places, and that probably therefore they are no great distance apart[1]. This theory, which pushes the Columbian hypothesis to extremes by supposing that Spain and China were only divided by some narrow strait, was the crudest of surmises: nor is it easy to understand how it came to throw into the shade that more philosophical conjecture of a plurality of *oikoumenai* which Aristotle himself put forth. It may be that attention was more easily attracted by the possible proximity of a great object like India, known undoubtedly to exist, than by a mere speculation such as that which suggested the plurality of habitable worlds. The surmise of India's proximity to Western Europe avowedly rested on the assumption that the earth-sphere was of no great size: and Aristotle elsewhere explains that its circumference had been reckoned by mathematicians at 40,000 stades, or about one-fifth of the truth. This was mere guess-work: and a scientific calculation soon displaced it. But it is indeed remarkable that anterior to all scientific admeasurement of the earth, and at the very dawn of modern knowledge, we encounter two hypotheses, either of which contained the seeds of the great discovery which we are investigating:—1. The plurality of *oikoumenai*, which Aristotle probably originated, and

[1] De Caelo, ii. 14. Aristotle's assertion of the smallness of the earth is evidently a reaction against Plato, who exaggerated the world's dimensions, compared the nations who dwelt around the Mediterranean to ants or frogs dwelling on the margin of a pool (Phaedo, 109 B), and spoke of a great western continent which had been submerged (see post, p. 93).

expressly approved; 2. The Columbian hypothesis of the practicability of a westward route from Spain to India, which Aristotle did not originate, but which he did not altogether disapprove. It was the first, or true Aristotelian hypothesis, which evidently suggested to Aristotle's celebrated patron the wish for more *oikoumenai* where the fame of his arms might be extended[1]; and, as will shortly be seen, this conception passed from Alexander to those Roman conquerors who were destined, two centuries later, to tread in his footsteps. This profound and scientific idea thus served no purpose except to inflame the arrogance of conquerors, and to inspire the adulation of poets.

Measurement of the sphere by the Greeks.

The substitution of a scientific calculation for this guess-work, and the discovery of the earth's actual size, made it extremely improbable that India lay anywhere near to Spain. This great step in cosmography was taken in the Ptolemaic age by Eratosthenes, who argued, according to Strabo[2], as follows: 'Were it not for the immense extent of the Atlantic Ocean, we should be able to sail from Spain to India, on the same parallel of latitude, by way of the other side of the globe. Our *oikoumenê* occupies about one-third of the earth's circumference. Taking, for instance, the parallel of Athens[3], the whole circumference on this parallel is about 200,000 stades. Of these stades, 70,000 are occupied by our *oikoumenê*, stretching from Spain on the west to further India on the east. The reverse way, then, there remain 130,000 stades to be tra-

[1] Juv. Sat. x. 168; Q. Curtius, lib. ix. cc. 3, 6. The Roman writers attribute to Alexander an intention of seeking a new world beyond the ocean (see post, p. 36), and there can be no doubt that this intention was founded on Aristotle's doctrine of the plurality of oikoumenai. The common version of the story is from Plutarch (De Animi Tranquillitate, vol. vii. p. 827, Reiske), who completely misunderstands it. Alexander, says Plutarch, was listening to a discourse of the philosopher Anaxarchus on the Infinity of Worlds, and wept to think that he had not yet conquered a single one among them. Plutarch conceives the allusion to be not to the limited plurality of oikoumenai, but to the infinite plurality of stellar worlds. In such a form, however, the story loses all its point.

[2] Lib. i. p. 113.

[3] Following Kramer, instead of Thinæ I read 'Athenæ.'

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versed by sea.' The accuracy of this estimate[1] indicates that the secret of the earth's size had been actually discovered. When the latitude of any two places has been determined, and their distance measured, the size of the earth has been approximately ascertained. In the time of Eratosthenes, it is known that other Greeks had attained the former result. The calculation of the latitude of Marseilles, his birth-place and home, made by the famous sailor Pytheas, is pronounced by modern astronomers to differ only by a single minute from the truth[2]. But Eratosthenes was the first to measure a degree on the meridian. This he performed between Syene and Alexandria, thus welding the second link in that grand chain of cosmical demonstration which begins with the nameless Greek who discovered the sphericity of the earth, and terminates with Newton and Laplace.

Measurement of the *oikoumenê.*

Though the size of the globe was thus approximately known, the size of the *oikoumenê* was still a matter of conjecture. Its ascertainment depended not on latitude, but on longitude: and this the Greeks had no certain means of determining. It was indeed not difficult to survey the length of the Mediterranean. The geographical dimensions of the Persian empire were approximately known: but here information ended. The expedition of Alexander promised a great extension of geographical knowledge in the far East: but this expectation was disappointed, and the decadence of Greek science found the Greeks in certain possession of one only of the factors on which the solution of the Hispano-Indian problem depended. They knew the size of the sphere: they were ignorant of the size of the *oikoumenê.* But here again the figures given by Eratosthenes approximate very closely to the truth. He reckoned the *oikoumenê*, as we have seen, to occupy one third of the earth's circumference on the parallel of Athens. On the

[1] It must however be remembered, as is remarked by Professor Baden Powell (Hist. of Nat. Philosophy, p. 54), that we do not know by what stadium Eratosthenes reckoned.

[2] Gassendi, Proportio Gnomonis ad Solstitialem Umbram observata Massiliæ, 1638, Op. tom. iv. p. 565.

parallel of Athens, as it happens, Eastern Asia widens out considerably towards the East. Had its dimensions been those of a few degrees to the south, where the peninsula of Further India terminates, the figures of Eratosthenes would have been nearly correct. A globe constructed on the data furnished by this passage would almost be the globe in use among ourselves, less the American continent and Africa south of the northern tropic: and on such a globe the vast distance from Further India to Spain would appear with great accuracy. But the absence of certainty in this estimate, as we shall see, soon tempted geographers to vary it at their pleasure: and these voluntary miscalculations tended to draw on the expedition of Columbus. Whether Columbus would have made his venture guided by the globe of Eratosthenes is at least doubtful: it is certain that he sailed on the supposition that the distance westward from Spain to India was much shorter.

Conception of Antipodes.

Even though Spain and India should lie near together, leaving no room in the northern hemisphere for any other *oikoumenê*, it was still possible that there might exist another *oikoumenê* in the southern hemisphere. Beyond the mere Aristotelian conjecture, the existence of such an *oikoumenê* had been inferred by the following process. The heat of the torrid zone was produced by the more direct impact of the sun's rays, culminating in directness at the equator. South of the equator the rays of the sun must of course become more and more oblique: and the southern hemisphere must necessarily contain a temperate zone, corresponding to that of the northern hemisphere. Beyond this there must of equal necessity be a southern frigid zone, corresponding to that beneath the northern pole-star[1]. It was likely that the south temperate zone, being habitable by man, was also inhabited by man, like that in the northern hemisphere. Whether this south temperate zone were completely isolated from the northern *oikoumenê* by a belt of ocean, in the manner imagined by Macrobius, was not ascertained. Many held that it was: others, more cautious in their speculations,

[1] See Ovid, Met. lib. i. 45–51; Virgil, Georg. lib. i. 233, &c.

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fixed no southern limit to Africa[1]. Whether separated or not by the ocean, the quasi-plane of the earth's surface would here differ widely from that of the Mediterranean. The inhabitants would stand, as it were, foot to foot, over against the inhabitants of Greece and Italy: and hence the name Antipodes. Trees would grow downwards, rain and snow would fall upwards. These were strange conclusions indeed: and the vulgar shrank from adopting them. The followers of Epicurus, rejecting everything not capable of being proved by the immediate evidence of the senses, followed the vulgar; and the absurdity of supposing that men existed who walked on the lower convex of the globe as a fly walks upon a ceiling was allowed to cast doubt on the otherwise probable hypothesis of the sphericity of the earth.

Criticism of Strabo on the Hispano-Indian hypothesis.

The calculation of the great Alexandrian mathematician as to the breadth of the Atlantic did not encourage the attempt to cross it. Strabo rightly regards this vast distance as an insurmountable obstacle. In an age when shipbuilding was in its rudiments, when the astrolabe and the magnetic needle were alike unknown, and when experienced seamen rarely ventured out of sight of land, no one was likely to attempt this perilous voyage of 130,000 stades across the vast solitudes of the deep. Even the coasting round the known *oikoumenê* was regarded as impossible. 'People have tried,' he says, 'to coast round the *oikoumenê*. They have been obliged to turn back, not, as they report, because there was any physical obstacle to their progress, but because their stores were exhausted, and the coasts were desolate[2].' How much more impracticable must have seemed the voyage across the barren and pathless ocean!

Possibility of a voyage to America in Ancient Times.

The distance which actually separates America from the Old World has never been thought to exclude the possibility of its having been reached by the nations of antiquity.

[1] Lucan, whom we have no reason for assuming to have held an unusual opinion, certainly assumes that Africa extended beyond the equator. Phars. ix. 876; x. 298. Ptolemy extended Africa as far as the south pole.

[2] Strabo, lib. i. p. 11; id. p. 113.

On the contrary, the assumption that the native races of the New World first reached it by crossing the Atlantic was until the present century a very generally received hypothesis. Some men of learning have been of opinion that the Canaanites sailed to America when the Israelites expelled them from the Promised Land: others, that the ten tribes of Israel themselves proceeded thither: others, that the aborigines are descendants of Phœnician emigrants. One learned writer thought that a claim might be set up on behalf of the Trojans[1]. The question of the descent of the American aborigines, as will shortly be seen, is no longer doubtful. America was first peopled from Asia: and it is highly improbable that any European vessel ever reached its shores until the tenth century of our æra. The degree of advancement in ship-building and seamanship necessary in navigating the Mediterranean is far below that necessary in navigating the Atlantic. Each sea developes a type of vessel proper for its navigation. Before the era of steam, the Mediterranean was mainly navigated by light galley-like vessels, as the Atlantic was always navigated by large vessels of stouter and rounder build, higher in board and mast. This type of ship could only have been produced by long actual experience of the Atlantic; and, as a matter of fact, such vessels were first constructed by the Northmen. They would, moreover, have been unable to accomplish the direct passage westwards across the Atlantic, unless and until the zone of the Trade-winds had been reached. The lack of astrolabe and compass was in truth of minor significance. An ocean voyage of very similar character, that from the mouth of the Red Sea to India, was regularly made without astrolabe or compass, in very early times[2]. It never happens

[1] Garcia, Origen de los Indios. 'To read these writers,' says Hugh Murray, 'one would think there never was any class of persons, from the earliest ages, that felt straitened or uneasy at home, that did not instantly set out for America.'

[2] The monsoons are for this voyage what Trades and Anti-trades are to the Atlantic voyage. There can be little doubt that the Phœnician navigators of the Red Sea employed the monsoons to reach successively the Myrrhifera Regio of Arabia, and India. The Greeks were certainly acquainted with the monsoons

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in summer in the Atlantic that the position of the sun is wholly obscured by day, and the stars by night, for long together; and in summer, if at all, such a voyage would have been attempted. Finally, the mere testing of a philosophical hypothesis did not constitute an incentive sufficient to support the attempt: and none as yet dreamed that any further result could ensue.

Transition from Greece to Rome.

Had the fortune of war put Carthage instead of Rome in possession of the intellectual heritage of Greece, there can be little doubt that America would have been discovered before the Christian era. The Carthaginians, beyond reasonable doubt, often visited Madeira and the Canaries. They must have been acquainted with the phenomenon of the Trade-winds. A slight advance in shipbuilding would have enabled them to verify the surmises which Greek thought and calculation so pointedly suggested. But the artificial globes over which the Greeks were pondering at Alexandria and Syracuse fell into the hands of a race whose strength lay not on the sea but on land. To prepare a metallic globe with an equator and poles, and to engrave on its surface, in their proper latitudes, such parts of the *oikoumenê* as were within Greek knowledge, was no hard matter. By whom the terrestrial globe was first constructed is uncertain: but the golden age of Greek science reputed it an ancient invention. The celestial globe, displaying the fixed constellations of the northern hemisphere, and enabling the student to trace the apparent paths of the sun and planets amidst them, was invented by Plato's disciple Eudoxus: and the elementary instruments of cosmographical science were thus completed as they stand at this day. The terrestrial globe long lagged behind the celestial in general accuracy: but in detail it was greatly improved by the extension of Greek geographical knowledge. Famous mathematicians did not disdain to super-

in the time of Alexander. The discovery of the monsoons is usually attributed to one Hippalus, in the time of Claudius. Hippalus was a mythical personage. The South-west monsoon was itself called Hippalus: and the name is probably the Greek translation of a poetical name bestowed on the monsoon by the Phœnicians (*ἵππος ἁλός*, Horse of the Sea).

intend its construction: and among the rich plunder of Sicily nothing was more highly valued by the Roman invaders than the magnificent spheres of Archimedes. One of these spheres was the only specimen of the spoils of Syracuse which decorated the house of its captor Marcellus: and another of greater size and beauty was reserved by him to grace the rebuilt temple of Virtue and Honour[1]. Had Carthage won in the struggle with Rome, these globes, in the hands of the adventurers of a mighty and progressive empire whose real centre was in Spain, might well have produced a discovery of America. They tempted the Romans, not to maritime discovery, but to inland conquest. Among the Romans a westward voyage over the Atlantic was only occasionally hinted at as the last stage of a barbarian conqueror's lunacy[2].

The plurality of *oikoumenai* developed by Strabo.

But Greek speculation survived, though it missed reduction into practice. Strabo, who was master of all the geographical fact and theory of his time, was not likely to neglect Aristotle's memorable conjecture of more *oikoumenai* than one. With almost prophetic insight, he even improved on it. Besides a Terra Australis, such as Aristotle had indicated, he clearly foreshadowed the discovery of a Terra Occidentalis, occupying the same latitudes as the old *oikoumenê* itself. 'Possibly,' he says, 'the same temperate zone may contain two or more *oikoumenai*. It is even likely that such are to be found in the parallel of Athens.' Were this the case, the physical objection to the practicability of a westward voyage to India would probably cease: for the new *oikoumenai* might serve as stepping-stones to the westward explorer. This remarkable anticipation goes far to justify the words of an enthusiastic modern geographer, who declares that the

[1] Archimedes also constructed celestial globes: Cic. de Rep. lib. i. cap. xiv. Cp. De Nat. Deor. lib. ii. cap. xxiii.

[2] Lucan, in his character of Alexander, Phars. x. 36, 39:

> . . . . 'Oceano classes inferre parabat
> Exteriore mari. . . . . .
> . . . . . .
> Isset in occasus, mundi devexa secutus,
> Ambissetque polos.'

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nations of Europe from remote antiquity were gifted with a divine intuition which revealed to them another great world beyond their horizon, and whispered that this world was their natural patrimony[1]. Aristotle had guessed at the plurality of *oikoumenai:* Strabo suggested the existence of another *oikoumenê* occupying the same latitudes as the old world, that is, the existence of America.

Observations of Posidonius on the Hispano-Indian hypothesis.

The estimate of Eratosthenes as to the relative position of Spain and China, though the most accurate current in the ancient world, was by no means universally accepted. Posidonius, who flourished about B. C. 100, extended the known *oikoumenê* from one-third to one-half of the globe's circumference. If this estimate were correct, only one-half of the earth's periphery remained to be traversed by the westward voyager to India. 'A long way, it is true,' says Posidonius: 'but with a good east wind at your back, it could be done[2].' Such a wind existed then as now, blowing all the year round, and ready to waft the westward voyager on his explorations. Sixteen hundred years, however, were to pass before the westward voyager sailed before it, only to stumble on a vast continent barring his path, stretching from the snows of the north to the snows of the south.

The 'New World' in Roman Literature.

Though the authority of Eratosthenes had declined among the Greeks, it was upon his system that Cicero proposed to construct his own great work on geography[3]. The conception of the second *oikoumenê* was to his broad and imaginative mind an unfailing source of delight. It was a necessary link of the great cosmical scheme: and he conceived it as inhabited by men, who shared with the dwellers in Europe, Asia, and Africa the provident care of the Deity. Cicero now and then indulged in licentious and improbable fancies as to the number and size of the habitable surfaces which stood forth from the ocean-surface of the globe. But in general he limits himself to the original Aristotelian doctrine

[1] Vivien de St. Martin, Hist. de la Géog. 3.

[2] Strabo, lib. ii. p. 161.

[3] Ep. ad Att. lib. ii. ep. 6, 7. Cicero enumerates Serapion, Hipparchus, and Tyrannio among the opponents of Eratosthenes.

of two *oikoumenai*, one in the northern hemisphere, one in the southern, separated by the ocean's belt, occupying the region of the equator[1]. But his commentator Macrobius, who flourished A. D. 395, following the Strabonian theory, supposed a second northern and a second southern *oikoumenê* on the other side of the globe, roughly corresponding to North and South America. According to this notion, the surface of the globe was divided by a border of waters into four segments[2]. There were four *oikoumenai*, separated by two broad belts of ocean, one such belt occupying the region of the equator, the other occupying the region of a great circle at right angles to the equator[3]. These rude conjectural anticipations of geographical truth were founded in good reason. The ratio roughly ascertained between the known *oikoumenê* and the size of the sphere was so small that the existence of other *oikoumenai* was highly probable. Cicero's popularisation of this doctrine of more *oikoumenai* than one fell in with the ideas of the Augustan age. The dream of the Greek conqueror was transferred to the victorious people who had succeeded to his heritage. Poets sang of the worlds which still awaited the rule of the master of the *oikoumenê*[4]. Geographers boldly spoke of an *alter orbis*, or second and new world[5].

[1] De Rep. lib. vi. cap. 19, 20; De Nat. Deor. lib. ii. cap. 66; Tusc. Disp. lib. i. cap. 28; Acad. Prior. lib. ii. cap. 39. The reflexions on the worthlessness of mundane glory, which are put into the mouth of Africanus, are highly curious. You see, he says, that the *oikoumenai* are few and small (rari et angusti), in fact, mere blots on the globe (maculae), and that broad blank spaces exist even in these. How then can you expect your fame to spread from mouth to mouth, and fill the whole earth? Consider, besides, that the distant dwellers on the earth stand at all sorts of angles to you (partim obliquos, partim transversos, partim etiam adversos stare vobis). What glory can possibly come out of conditions like these?

[2] 'Quadrifida.'

[3] Comm. in Som. Scip. ii. 9.

[4] Tibullus, lib. iv, ad Messalam, 149, 175:

'Te manet invictus Romano Marte Britannus,
Teque interjecto *mundi pars altera* sole.

. . . . . .

Ergo, ubi per claros ierint tua facta triumphos,
Solus *utroque* idem diceris magnus in *orbe*.'

Cp. Virg. Æn. vii. 225.

[5] Pomp. Mela, lib. i. c. ix; lib. iii. c. vii. In the former passage Mela men-

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A verse of Lucan has already been cited which describes the plan of sailing westwards over the ocean as a piece of lunacy contemplated by Alexander. Among the curiosities of Roman literature is a small collection of the debates practised by students in the schools of rhetoric[1], first among which stands the question whether Alexander should be advised to sail over the ocean in search of new *oikoumenai*. 'It is easy,' says one speaker, 'for the imagination to paint fertile lands lying in the bosom of the ocean, to imagine that beyond the ocean lie other shores, the beginning of another world, and instead of assuming that the system of nature comes to an end, to assume that a new system of nature springs up where the old one seems to cease. All this is easy enough—because the Ocean cannot be sailed over. Let Alexander be content with having conquered the known world. Within this known world Hercules earned his apotheosis.' Then follows a gloomy picture of the reported dangers of this unknown ocean; darkness, monsters, heavy and impenetrable waves, stars none at all, or unknown. 'Thus, O Alexander, hath nature laid it down: beyond all other things lies the Ocean: beyond the Ocean lies nothing[2].' The burden of the discussion is, that even could the Atlantic be crossed, no benefit could ensue: and that the secrets of the western ocean are guarded by a divine mystery, which it is impious to penetrate[3]. One speaker hints at a voyage to the unseen

tions a fanciful opinion that the Nile rose in the other *oikoumenê*, sank down and flowed beneath the equatorial ocean, and came to the surface again in Ethiopia. Cp. Lucan, Phars. x. 255.

[1] On such debates generally, compare Juvenal, Sat. i. 15, and Persius, Sat. iii. 44. The Liber Suasoriarum is usually printed among the works of Seneca, having been formerly ascribed to a rhetorician of the same name, who is identified with Seneca's father. Each student addresses himself in turn to the matter in question, and the debate is wound up by the master-rhetorician in person (Divisio).

[2] A subsequent speaker quotes this epigrammatic saying in Greek: Αὐτὸ μὲν μετὰ πάντα, μετὰ δὲ αὐτὸ οὐδέν.

[3] This superstition is merely formal. Even the rationalising Pliny reproves the impious daring of the great Alexandrian who discovered the precession of the equinoxes and made the first catalogue of the fixed stars. 'Hipparchus . . . ausus rem etiam Deo improbam, annumerare posteris stellas.' Nat. Hist. lib. ii. c. 26. Lucan ranks the knowledge of the size of the ocean, and of the remoter parts of the globe, among the prerogatives of omniscience (Phars. v. 181).

West by way of the East[1]. Finally are quoted the lines put by a Roman poet into the mouth of the conqueror Germanicus, who is supposed to be sailing westwards over the Atlantic: 'Whither are we bound? Night falls, and the end of all things hides in darkness the land we have left behind us. Are we seeking distant nations lying under another meridian, and a second world, not mentioned in books? The Gods call us back, and forbid mortal eyes to behold the extreme bound of nature. Why vex we these strange seas with the oar? Why violate waters hallowed by a divine mystery, and disturb the retreat of the Gods[2]?'

Marinus Tyrius.

But the more scientific geographers, intent on ascertaining the dimensions of the old world, fixed their attention more and more on the Hispano-Indian hypothesis. The result of increased knowledge of Asia was to increase its dimensions on the map. As a consequence of this, the estimated distance of India westwards from Spain steadily decreased. Marinus Tyrius, the most eminent of the geographers before Ptolemy, reduced this distance below the estimate of Posidonius. Eratosthenes, as we have seen, assigned to the *oikoumenê* one third of the earth's circumference. Posidonius supposed the east coast of China to be either way about equidistant, that is, either way about twelve hours of the sun's apparent course, from the west coast of Europe, whether eastwards or westwards. Marinus Tyrius extended the latitude of the *oikoumenê* to fifteen hours, leaving only nine hours of the sun's course to be traversed by the westward voyager. Western Europe was thus stretching forth in imagination more and more

[1] 'Apaturius dixit: *Ἐντεῦθεν ναῦς ἐκ μιᾶς φορᾶς εἰς ἀνατολάς, ἔνθα δὲ εἰς τὰς ἀοράτους δύσεις.*'

[2] The poet is Pedo Albinovanus:

'Quo ferimur? ruit ipse dies, orbemque relictum
Ultima perpetuis claudit natura tenebris:
Anne alio positas ultra sub cardine gentes
Atque alium libris intactum quaerimus orbem?
Dii revocant, rerumque vetant cognoscere finem
Mortaleis oculos: aliena quid aequora remis
Et sacras violamus aquas, divumque quietas
Turbamus sedes?'

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towards eastern Asia; the time was approaching when the Columbian hypothesis would be tested. The estimate of Marinus Tyrius was the lowest hitherto made: and this low estimate those to whom the Columbian hypothesis commended itself were naturally disposed to accept. In after ages, Marco Polo described the great island of Cipango (Japan) lying far to the east of Asia. The western world were equally assured of the existence of the great island of Antilia, lying in the Atlantic far to the west of the Azores. With the addition of these two islands, a map of the world constructed in accordance with the belief of Marinus Tyrius presented a singularly inviting aspect. With less than half of the globe's circumference to be traversed, and with these two islands as resting-places, the difficulties of the Hispano-Indian voyage disappeared. If we set the very attractive aspect of a map based on that estimate against the enormous length of the African coast revealed by the Portuguese explorations in the fifteenth century, instead of being astonished at the boldness of the conception of Columbus, we shall rather wonder why his westward expedition was so long postponed.

Seneca.

But the realisation of the Columbian idea was contemplated at Rome long before the world heard of Antilia and Cipango. Seneca, in the true spirit of a Stoic, to whom the universe itself was but a small thing, makes light of the distance. 'Pray,' he asks, repeating the phrase of Posidonius, 'how far is it from the furthest shores of Spain westwards to those of India? A very few days' sail, with a fair wind at your back[1]!' More famous than that Stoical exaggeration which from the trifling size of the globe leapt to the conclusion that Spain and India could not be far apart, is his elaboration of the Aristotelian doctrine of the plurality of *oikoumenai*. The passage is contained in one

[1] Seneca, Nat. Quaest. Præf.: 'Curiosus spectator excutit singula, et quaerit. Quidni quaerat? Scit illa ad se pertinere. Tunc contemnit domicilii prioris angustias. Quantum enim est, quod ab ultimis littoribus Hispaniae usque ad Indos jacet? Paucissimorum dierum spatium, si navem suus ventus implevit.

of the choruses to his otherwise obscure tragedy of Medea[1]. Over this passage Columbus often pondered[2]: and it was in every one's mouth when the true nature of the Discovery came to be known. Dilating on the civilisation of the Empire, the poet contrasts the painful navigation of early times and the ease with which travellers now visited every part of the habitable earth. 'The Indian,' he says, 'now quaffs the Araxes: the Persian drinks of the Elbe and the Rhine. And the time shall even come, when the raging ocean itself, instead of being a limit and an obstacle, shall become a means of communication. The *oikoumenê* will thus be thrown open; the pilots of the ocean will discover new *oikoumenai;* and there shall no longer be a "remotest Thule" on the map.' This passage, long regarded as a flight of poetry so lofty as to snatch some of the genuine inspiration of prophecy, is but an anticipation of improvements in navigation, heightened by a slight amplification of Aristotle's conjecture of more *oikoumenai* than one, derived from him through the channel of Strabo. It accords with the general tone of the writer's forward-looking mind. Seneca's firm faith in the general triumphs which await scientific enquiry would do honour to a more advanced age. The time will come, he writes elsewhere, when time, and the diligence of a later day, shall bring to light the things which now are hidden. A single age suffices not to search

[1] Medea, act ii. 371:

'Indus gelidum potat Araxem;
Albim Persae Rhenumque bibunt.
Venient annis saecula seris
Quibus Oceanus vincula rerum
Laxet, et ingens pateat tellus,
Tiphysque novos detegat orbes,
Nec sit terris ultima Thule.'

The sense of the fourth line may be gathered from similar expressions in Suas. i, 'Pelagus totius orbis vinculum, terrarumque custodia,' and De Consolat. ad Marc. c. 18, 'Vinculum terrarum Oceanus, continuationem gentium triplici sinu scindens, et ingenti licentia exaestuans.' Bacon and his imitator Hakewill capriciously interpret 'pateat tellus' to mean that 'thorough lights' (in the sense of windows) shall be made in the dark fabric of the globe.

[2] Historie del Sig. D. Fern. Colombo, c. vii. How far Columbus was really inspired by this supposed prophecy, is uncertain. He certainly pondered over the passage after the discovery; for he twice copied it out in the Profecias

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out these vast mysteries. The time shall come when our descendants shall marvel at our ignorance of what is to them so notorious[1].

Ptolemy.

The transition from ancient to modern geography is represented by the famous work of Ptolemy, written in the second century. Ptolemy accepted the estimate of Posidonius, and believed in an insular *oikoumenê* extending over half the globe's circumference. He thus reduced the extravagant longitude of fifteen hours, assigned to the *oikoumenê* by Marinus, by one-fifth[2]: and his opinion, laboriously supported by a host of observations and measurements, sufficed to settle terrestrial cosmography during the whole Middle Ages. During fourteen centuries Ptolemy remained the Aristotle of geography. The map of the inhabited hemisphere, constructed in accordance with his directions, was in one conspicuous feature repugnant to those of his predecessors. Enough was now known of Africa to destroy the Ciceronian hypothesis of a broad girdle of ocean in the region of the equator. Africa was known to extend south of the equator: and as if to cut off all hope of reaching India from Europe by coasting Africa, Ptolemy boldly extended Africa to the south pole[3]. It followed that if India were ever reached from Europe by sea, it must be by a westward voyage across the Atlantic: and Ptolemy thus directly prepared the way for the revival of the Hispano-Indian hypothesis. The resuscitation of arts and sciences at the close of the Middle Ages brought with it nothing to shake his authority. Ptolemy was for the investigators of the Renaissance the highest exponent of ancient geographical science: and his works came rapidly into circulation after the introduction of printing[4]. The

[1] Nat. Quæst. vii. 25: 'Veniet tempus, quo ista, quae nunc latent, in lucem dies extrahat, et longioris aevi diligentia: ad inquisitionem tantorum aetas una non sufficit. Veniet tempus, quo posteri nostri tam aperta nos nescisse mirentur.'

[2] Ptol. Geog. lib. i. c. 11.

[3] Id. lib. iv. c. 9.

[4] The Emperor Frederic II (1212–1250) had Ptolemy translated into Latin from the Arabic. Sixtus V had Ptolemy printed at Vicenza, 1475: the edition of Ulm appeared in 1478. Pliny had already appeared in 1468, Strabo in 1469, Mela in 1471, Solinus in 1473. Vivien de St. Martin, 297, 298.

conception of one half of the earth's surface covered with the ocean and the other half with the *oikoumenê* of the ancients, popularised for the educated world by Ptolemy, has been epigrammatically said by D'Anville to be at the same time the greatest of geographical errors, and the seed of the discovery of the greatest of geographical truths[1].

Relapse of geographical speculation.

Like many other fruitful speculations, the shrewd geographical guesses of the Greeks slept during the Dark Ages in dust and neglect. The very sphericity of the earth, on which they were based, was sometimes doubted: but the theologians were chiefly scandalised by the suggestion that somewhere on the surface of the sphere there existed a race of men who were not of the seed of Adam, and therefore outside the scope of human redemption. The theory that the hemisphere south of the equator was subject to the same physical conditions as that to the north was therefore rejected: and belief in Antipodes had by the fourth century become a rag of heathenism. Lactantius is not content with a bare denial: he denies it with scorn and contempt. What fool believes that there are men walking with their feet higher than their heads? That objects which with us lie on the ground, are there suspended from it? That plants and trees spring downward, while snow, rain, and hail fall upward? The hanging gardens of Babylon, forsooth, need no longer be accounted among the world's wonders. If this philosophers' nonsense were true, half the globe, with all its fields, seas, cities, and mountains, were one vast hanging garden[2]! Augustine, on the other hand, contents himself with a negation of studied and precise sobriety. The fable of Antipodes, that is, of men dwelling in the opposite part of the earth, where the sun rises when it sets to us, having their feet opposite to ours, is on no

[1] Humboldt, H. de la Géog. du N. Continent, vol. i. p. 11.

[2] Lactantius, Div. Inst. iii. 24: 'Quid illi, qui esse contrarios vestigiis nostris Antipodes putant, num aliquid loquuntur? Aut est quisquam tam ineptus qui credat esse homines quorum vestigia sunt superiora quam capita? Aut ibi quae apud nos jacent inversa pendere? Fruges et arbores deorsum versus crescere, pluvias et nives et grandinem sursum versus cadere in terram? Et miratur aliquis hortos pensiles inter septem mira narrari, quum philosophi et agros, et maria, et urbes, et montes pensiles faciunt?'

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account to be believed[1]. Despite these authoritative utterances, the antipodean heresy was still entertained in secret. It was one of the scandals which ecclesiastical reformers of the eighth century resolved on destroying. In the course of their crusade against clerical profligacy, Pope Zacharias and Archbishop Boniface condemned Virgilius Bishop of Salzburg as a heretic for holding the existence of Antipodes[2]. Still the heresy lingered on, as is proved by occasional protests against it. 'Let it not be supposed,' writes a Commentator on Boethius, in the tenth century, 'that I believe the idle tale of Antipodes, which is utterly contrary to the Christian faith[3].' This pious scepticism is less gross and ridiculous than might at first appear. The sphericity of the earth, which Lactantius does not deny, and which Augustine admits to be not improbable, was distinctly discredited by the penetrating Tacitus. What these fathers deny, is the existence of human beings under another divine dispensation[4].

The Earth still believed to be spherical.

In the very depth of the Dark Ages, the authority of the Greek and Latin geographers was sufficient to preserve the doctrine of the sphericity of the earth[5]. The Aristotelian

[1] De Civ. Dei, xvi. 9: 'Quod vero et Antipodes esse fabulantur, id est homines a contraria parte terrae ubi sol oritur quando occidit nobis, adversa pedibus nostris calcare vestigia, nulla ratione credendum est.'

[2] Letters of Boniface.

[3] Jourdain, De l'Influence d'Aristote et de ses Interprètes sur la Découverte du Nouveau-Monde, p. 12.

[4] The gross cosmography of the unlearned Cosmas Indicopleustes (see Montfaucon, Collectio Nova Patrum, vol. ii) has been most unfairly taken as a specimen of patristic science. Montfaucon gives a picture of the bell-shaped earth of Cosmas. This conception, like that of Aethicus and the anonymous geographer of Ravenna, seems to be based on the vulgar, as opposed to the literate, cosmography of Rome, and agrees closely with that of Tacitus. Men of learning, whether ecclesiastics or not, believed in the spherical earth, with its Terra Australis or Antichthon in the southern hemisphere. The sole dispute was whether it contained inhabitants. Isidore of Seville, in the seventh century, held that it did not. Our own Venerable Bede, in the eighth, held that it did. De Elementis Philosophiae, lib. iv: 'Cujus superiorem inhabitamus partem, antipodes nostri inferiorem: nullus tamen nostrum ad illos, neque illorum ad nos, pervenire potest.'

[5] In addition to the above citations, I might quote Jordanes, Orosius, Dicuil, and Moses of Chorene. For later times the treatise of John of Halifax (De Sacro Bosco) is enough to refute the singular error that the doctrine of the earth's sphericity was generally discredited during the Middle Ages, and only revived after the exploit of Columbus.

revival of the eighth and ninth centuries drew attention to it anew. It is noticed in a letter addressed to Charlemagne by the English Alcuin[1], to whom that revival owed so much: and it was a marked feature in the teaching of Alcuin's pupil Rabanus Maurus. In the ninth century, this learned German declared to his pupils that there existed a fourth quarter of the globe as yet unseen by mortal eyes. The centre of the upper hemisphere, according to him, is Jerusalem. Separated from the three continents of this upper hemisphere by the intolerable heats of the Torrid Zone, is a fourth continent, beyond the ocean, forming an antichthon or counter-world, and falsely said to be inhabited by men called Antipodes[2]. In the succeeding ages, precisely similar views were entertained by the Arabian geographers, and by the Aristotelians of the Schools. 'The sea of China,' writes one of the former, in 1153, 'which washes the lands of Gog and Magog (Eastern Asia), communicates with the Sea of Darkness (the Atlantic). Beyond Asia, on the eastern side of the globe, lie the Vic-Vac islands. What there may be beyond them nobody knows[3].' The dawn of modern literature found speculation already rife as to the mysteries of the unknown sea: and the doctrine of the sphericity of the earth is poetically developed in the great poem of Dante[4]. The sphere of Dante has two *oikoumenai*, one in each hemisphere: Jerusalem is the centre of the hemisphere known to mankind, and the Mount of Purgatory the centre of the southern or antipodal hemisphere[5]. Few flights of this mighty master

[1] Nouvelle Biographie Générale, art. Alcuin, the writer of which can hardly believe that Alcuin really knew the earth to be spherical.

[2] De Universo, lib. i. c. iv: 'Extra tres autem partes orbis quarta pars trans oceanum interior in meridie, quae a solis ardore incognita nobis est, in cujus finibus antipodes fabulose inhabitare produntur.'

[3] Humboldt, vol. i. p. 52.

[4] See the concluding lines of the Inferno and the opening ones of the Purgatorio.

[5] Purgatorio, cant. iv. 67. Dante's poetical cosmography is wholly founded in the scientific ideas of his time. His central Hell is derived from Honoratus of Autun: see the Vicomte de Santarem, Essai sur l'histoire de la Cosmographie, vol. i. p. 62. It was believed in as late as Bacon. Sebastian Münster calculates its diameter at two or three German miles.

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are more daring than that in which the hero of the Odyssey, the straits of Gibraltar passed, challenges his companions to follow the setting sun, and seek that new and unpeopled world which lies in the west. The prophetic soul of the Florentine poet penetrates two centuries into the future, and anticipates the Genoese discoverer. To him, as to Seneca, the voyage across the Atlantic seemed a lighter task than that along the Mediterranean to the Pillars of Hercules. Brothers, says Ulysses, who through a hundred thousand perils have now reached the west, shrink not from the small remnant of adventure which yet remains, nor refuse to attempt that unpeopled world which lies behind the sun. Remember whence ye sprang: ye were not made to live as brutes, but to pursue virtue and knowledge[1]. Turning their stern to the dawn, they sail rapidly away from the old world, and at length with great joy dimly behold a mountain loftier than any hitherto seen. But from the shores of the new world there blows a violent storm, the vessel founders, and Ulysses and his adventurous crew perish in the waters. Pulci, another Florentine poet, continued this bold strain of invention, and sang of cities and mighty kingdoms lying under our feet and unknown in our hemisphere[2]. Thus was the conception which suggested to the Greeks the Hispano-Indian idea and the plurality of *oikoumenai* vigorously working at the very beginning of the great movement whose effect was to destroy the mediæval and give birth to the modern. It is curious to find that while Italy was

[1] Inferno, canto xxvi. 112–120:

'O Frati, dissi, che per cento milia
Perigli siete giunti all' occidente,
A questa tanto picciola vigilia
De' vostri sensi, ch'è del rimanente,
Non vogliate negar l'esperienza,
Diretro al sol, del mondo senza gente.
Considerate la vostra semenza:
Fatti non foste a viver come bruti,
Ma per seguir virtute, e conoscenza.'

[2] Morgante Maggiore, canto xx:

'E sopra tutto commendava Ulisse,
Che per veder nell' altro mondo gisse.'

the centre of this great movement, the actual impulse which produced the coming change resulted from a concurrent movement in Teutonic countries.

Revival of geographical speculation. Albertus Magnus, and Roger Bacon.

Among the most remarkable geographical speculations of the Middle Ages are those of a German Dominican friar, Albert of Bollstadt, better known as Albertus Magnus[1]. He rejected the current doctrine of the uninhabitability of the torrid zone, and refuted the silly disputants who denied that men could exist at the Antipodes without tumbling off the globe. He argued that the same gradations of climate which marked the northern hemisphere must also be produced in the southern. This latter he believed to be inhabited by men, though these inhabitants were prevented by the great waste of waters from visiting the northern *oikoumenê*. Similar opinions were held, in another land, by a greater man than Albertus, Roger Bacon, the famous Franciscan friar of Oxford. It happens, and assuredly not without cause, that in this ancient seat of learning have originated more than one of those speculations which in the end have most powerfully influenced the New World's fortunes. It was at Oxford that Hakluyt lectured on Cosmography, it may be with Raleigh for a listener: at Oxford, that William Penn was moved with that memorable 'opening of joy,' which had for its ultimate result the reconstitution of America on its modern basis: at Oxford, that a solitary friar of the thirteenth century collected the identical arguments which through the medium of a French copyist excited the enterprise of the Discoverer. The torch which Aristotle had kindled was transmitted by Bacon to Alliacus: Alliacus handed it on to Columbus. 'Aristotle,' writes Bacon in 1267, 'says that there is not much ocean between the western parts of Spain and the eastern parts of India. He thinks that more than a fourth part of the surface of the globe is habitable. Averrhoes confirms this. Seneca says that this sea might be crossed in a few days with a favourable wind. Pliny says that people have actually sailed from the Arabian Gulf to Cadiz. Now the Arabian Gulf is a whole year's voyage.

[1] Humboldt, vol. i. p. 55.

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from the Indian sea (at the eastern extremity of Asia), so that it is clear that the eastern extremity of Asia cannot be a long way from us. The sea between Spain and Asia at any rate cannot possibly cover three-fourths of the surface of the globe. Besides, it is written in the fourth Book of Esdras, that six parts of the earth are habitable, and the seventh is covered with water.' After defending the authority of the Book of Esdras, though apocryphal, he goes on: 'Therefore I say that though the *oikoumenê* of Ptolemy be confined within one fourth of the globe's surface, more of that surface is really habitable. Aristotle must have known more than other people, because by Alexander's favour he sent out two thousand men to enquire about these matters. So must Seneca; for the Emperor Nero sent out people to explore in the same way. From all this it follows that the habitable surface of the earth must be considerable, and that which is covered with water but small[1].'

Alliacus.

This memorable passage from Roger Bacon's Opus Majus was appropriated a hundred and forty years afterwards by Pierre D'Ailly, the author of a popular treatise called Imago Mundi, written early in the fifteenth century. D'Ailly, known in the learned world by the name of Alliacus, was one of the most eminent schoolmen of the University of Paris. His writings in support of the authority of the Church, and in elucidation of the science of judicial astrology, procured him the bishopric of Cambray, and the presidency of the commission which condemned John Huss to the flames[2]. By a strange contrast, his writings on cosmography form one of the most important links in the history of the Discovery of America. In D'Ailly's pages, the arguments of the ancients first struck the eye of Columbus: and to this day the tourist at Seville beholds the

[1] Humboldt, vol. i. p. 58; Bacon, Opus Majus, p. 183. It should be remembered that Ptolemy had fixed no precise bounds to Asia, though he held that the *oikoumenê* occupied half the earth's longitude. Asaph, in the eleventh century, and Hugh of St. Victor, in the twelfth, had taught that Asia alone occupied one half of the longitude (Santarem, vol. i. pp. 55, 64), and thus preceded Roger Bacon and Columbus in recurring to the pre-Ptolemaic estimate.

[2] Bayle, art. D'Ailli.

Discoverer's own parchment-bound copy of the Imago Mundi, its margin covered with annotations in his autograph[1]. This venerable black-letter volume was the Vade Mecum of Columbus. Its vacant spaces became his commonplace book: and in default of original matter, he occasionally transcribed from its text into his letters[2]. We may be sure that the opinions of this oracle of the Schools were freely accepted and deeply pondered by Columbus: and on the great question which occupied the Discoverer's mind the oracle uttered no uncertain sound. D'Ailly insisted that the *oikoumenê* was much larger than Ptolemy allows, and that the west of Africa was no great distance from the east of India[3]. 'It has been found' (*expertum est*), he says, improving upon the mere conjecture of Seneca, 'that this space can be sailed over in a few days, if the wind is favourable. . . . The *oikoumenê* really extends far beyond the half of the latitude of the globe. In fact, the sea between India and Spain is but a comparatively narrow strip, running north and south.'

Columbus not properly a discoverer.

It was entirely with the expectation of crossing this sea, and reaching India from Spain, that Columbus concerned himself. Nothing was further from his purpose than mere discovery. He was inspired by the hope of reaching that famous land of gold, pearls, and spices, which was now more than ever attracting the attention of Europe. He wanted no new worlds: and if he had been told the fact that western Asia is really about three-fourths of the earth's latitude from Spain, and that the westward voyager would have to encounter, on his way, a vast continent stretching nearly from pole to pole, impassable at the north, passable only with peril and difficulty at the south, and mainly inhabited

[1] The edition has neither name nor date. A photograph of one of the annotated leaves is given by Mr. Harrisse in his Notes on Columbus.

[2] Letter dated from Hayti in 1498. Humboldt, vol. i. pp. 60, 68.

[3] Alliacus, Imago Mundi, cap. viii. fol. 13 b. The poem of Leonardo Dati, Della Sfera (1422), proves that the poet is sometimes a better man of science than the philosopher. The *oikoumenê*, he correctly maintains, occupies much less than half the sphere:

'Questo tondo non è mezza la sfera,
Ma molto menore: e tutto l'altro è mare.'

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by irreclaimable savages, he would probably have abandoned his design. Other men, the Hakluyts, Raleighs, and Penns, might have been attracted to the new *oikoumenê*. Columbus would never have stirred to visit it. The genius of Columbus was, it is true, eminently speculative. But his speculation was ever retained as nearly as might be within the region of practice. Had he anticipated nothing in the west but unknown and uncolonised lands, his capacities as a discoverer might have been exhausted, as those of many a brave sailor had already been exhausted, in the exploration of the coast of Africa. He was not dominated by that paradoxical passion which impels the human will to accomplish an end with a force in proportion to the danger and difficulty which attends the attempt. He believed that there were two ways to India, that the westward way was the shorter, the safer, the easier of the two, and that its discovery therefore could not fail to pay as a commercial speculation.

Europe and India.

The belief in the proximity of Spain and Asia was only one factor in the process which produced the voyage of Columbus. It had been existing, as we now know, and existing not unnoticed, for nearly two thousand years. The second and more modern factor, on which this ancient belief suddenly operated in the fifteenth century with motive force, was the growing power of attraction, arising from more than one cause, exercised by India over Europe. India, a name vaguely used, and thought to be lawfully applied to every shore washed by the Indian Ocean, had from the earliest times been to Europe a sort of fairy-land. It was vast in extent; every century thought it vaster. The vaster it grew, the less became the distance westwards from Europe. It was rich and populous beyond telling: it was full of everything that man's heart could desire. Since the days of King Solomon, India had been another name for wealth, and luxury, and splendour. The favourite generalisation of Herodotus, that the uttermost parts of the *oikoumenê* are the most richly gifted by nature, was amply justified by this land of gold, precious stones, and spices. Whatever European nation should first

reach India by sea, set going a maritime Indian trade, and secure the monopoly of it, must necessarily become the leading nation of Europe. A considerable European trade with India already existed. It flowed in several channels; one by way of the Black Sea and Central Asia: another by way of the Euphrates Valley, the Persian Gulf, and the port of Ormus: a third by way of the Isthmus of Suez, the Red Sea, and the port of Aden. The merchants of Venice and Genoa knew only too well how their trade was strangled, its profits intercepted, and its development checked, by the jealous and grasping Mahomedans over whose possessions it passed. To carry it direct to the shores of India became the dream of the age. And India was better known to mediæval Europe than might be thought. That age, which we have seen to be an age of maritime revolution in the west, marked also a turning-point in the acquaintance of the western world with India. Hitherto its progress had flagged. The expedition of Alexander had the effect of communicating to Europe a knowledge of this great country somewhat better than the sparse gleanings of Herodotus: and the reports of Megasthenes, a lieutenant of Seleucus Nicator, who appears to have lived during several years at Patali-putra as Resident at the court of the Raja Chandragupta, furnished European curiosity with an appropriate mixture of fact and fable[1]. But after the death of Seleucus, all the effect on India of the Alexandrine expedition seems to have ceased. Even the acquisition of Egypt, always the key of India, by the Romans, led to scarcely any further knowledge of India. The particulars given by Strabo and Pliny are borrowed from the Macedonian accounts: and the gross errors of Ptolemy, and in the time of Justinian of Cosmas Indicopleustes, prove that in Roman Europe the knowledge of the country distinctly retrograded. For many centuries India was in the western world a meaningless name. The Greek Empire and the Eastern Caliphat concealed from view all that lay beyond them: and though a large trade was really carried on in Indian produce, the markets of Alexandria and Aleppo were the

[1] See Mr. J. Talboys Wheeler's History of India, vol. iii. pp. 177–208.

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limit of European experience. But in the Middle Ages, this indirect Indian trade of Europe underwent a great increase: and the knowledge of India increased proportionally. The religious enthusiasm of the time lent its aid. That Christian communities, some of great number and importance, still existed in various parts of the East, was well known: and even without the anti-Mahomedan movement of the West and the wars for the Holy Sepulchre, it was natural that the sympathetic intercorsue maintained throughout the world by the great Judaic community, and the far-reaching propaganda of Islam, should be imitated by the rising Church of Christendom. In the thirteenth century, Central Asia was penetrated by Christian missionaries.

Central Asia opened to Europe.

The great Tartar invasion, which in this century engulfed the Northern world from the Baltic to the Pacific, had a reflex effect. It opened Central Asia to European enquiry, and thus gave an impulse to the growing interest of the world of the West in that of the East. The conquest of Russia, the overrunning of Poland and Hungary, and the invasion of Germany, by the hordes of Ginghis Khan, struck Europe with panic. The arrest of the Tartar advance on the Danube was probably due less to German valour than to the fact that the wave of invasion had spent its force. But dark as was the shadow which the permanent conquest of Russia by idolaters flung over Europe, the fears which it aroused were gradually quieted. The Christian world, arguing from their own invincible repugnance to the faith and the persons of the Tartars, expected the same repugnance in return. But the invaders were not thus irreconcilable. Their khans had welcomed to their camps a few Europeans who were skilled in war and handicraft. Through these adventurers the news arrived that the Tartars were by no means ill-disposed to Christianity: and the favourable reception which they had given to Islam led naturally to a hope that the true faith would be welcomed with yet greater readiness. In the conversion of the Tartars Europe saw the best possible guarantee of its security: and Innocent IV despatched two missions, one of Dominican monks, the other of Franciscans, to invite them to lay down their arms, and

embrace Christianity. The Pope's example was followed by the pious Louis of France. These singular expeditions made famous the names of Ascelin, Carpini, Lonjumeau, and Ruisbroek, as missionaries who had boldly penetrated the heart of an unknown continent. Their narratives, which were eagerly read, popularised in Europe the geography of Central Asia: and during the remainder of the thirteenth century Central Asia was traversed by many such monks, travelling under cover of their religious character, partly inspired by the idea of extending the borders of Christianity, partly by the growing sentiment of a widening intellectual horizon[1]. Guided by the Franks in the Khan's service, these missionaries extended their travels to the great eastern nation which Ginghis had conquered. Through them, and the merchants who followed them, Europeans acquired intelligence of a marvellous land called Cathay, lying on the extreme east of the Indies, abounding with rich and vast cities, filled by a numerous and civilised people exceedingly desirous of trading with Europe[2]. Now Cathay was China: and nothing in the narrative of Ruisbroek more astonished the western world than his report of fifteen towns in this remote region inhabited by Christians of the Nestorian sect, and presided over since the middle of the seventh century by a Christian bishop. Besides this, Nestorians were found, mixed with Mahomedans, in most of the cities of the Tartar empire, from Persia to the Pacific. The morals and doctrines of these Asiatic Christians alike needed renovation; the monks of the West were in search of fresh outlets for their numbers and enthusiasm; and ere long Franciscan houses were found in the Chinese cities. Nor was the acquaintance of Europe with the true India less on the increase. The Jews and Moors of the Mediterranean trafficked freely with those of the East: Christian communities were found on the shores of the Red Sea: and by way of Ormus and Aden Italian merchants pene-

[1] The narratives of Carpini and Ruisbroek are printed in Hakluyt, vol. i. pp. 21–117.

[2] Peschel, Zeitalter der Entdeckungen, book i. ch. 1; Yule's Marco Polo, 2nd ed. vol. i. p. 135.

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trated to the ports of Guzerat and Malabar. Commercial interest thus early was destroying the barriers of race and language, and the Eastern world was gradually unveiling itself to the West, many years before a bold venture was made for the connexion of the two by a westward voyage from Europe.

Marco Polo.

The story of the Discovery now reaches a memorable stage. Until the last quarter of the thirteenth century, the mysterious land of China, the astonishment of the Middle Ages and the problem of the modern, may be said to have been unknown to Europe. The veil was suddenly rent by the publication of the so-called Travels of Marco Polo. This celebrated personage was not, in the strict sense of the word, a traveller. He was one of those professional politicians of the Middle Ages who are familiar to the student of Italian history. The son of a travelling Venetian merchant, who had already passed many years in Tartary, and been regarded with welcome and consideration by the Grand Khan himself, he was taken at an early age to the Grand Khan's court, and apprenticed, as it were, to the Grand Khan's service. The young adventurer possessed in a high degree that subtlety and versatility which opinion attributes to his nation. Profiting by his opportunities, he soon succeeded in transmuting himself into a Tartar[1]. He adopted the Tartar dress, studied the Tartar manners, and mastered the four languages spoken in the Grand Khan's dominions. Kublai appears first to have employed him as a secretary, and then to have sent him on confidential missions: and during a service of seventeen years Marco was engaged in this way, in journeys by land and sea, in every part of the Grand Khan's empire and dependencies. More than this, he travelled on his own account, everywhere, it would appear, recording his notes and observations, partly for his own use, and partly for the information or entertainment of his master. These notes and observations were given

[1] As other adventurers have done in all ages. According to Ruisbroek, Ginghis employed German immigrants in working the gold mines, and in forging arms.

to the world of Europe under the following circumstances. After a residence of seventeen years, Marco obtained permission to revisit Venice, accompanied by his father and uncle. Not long after his return, he was taken in a sea-fight with the Genoese, and committed to prison. To relieve the *ennui* of his confinement, he procured his rough notes from Venice, and dictated to a fellow-prisoner the narrative which passes under his name. This narrative soon became known to the world: and from its publication may be dated that intense and active interest in the East which has gone on steadily increasing ever since. The rank and dignified character of this famous adventurer, the romance of his career, the wealth which he amassed, the extent of his observations, the long series of years they had occupied, the strange and striking facts which he reported, and the completeness and perspicuity of his narrative, combined to produce a marked effect on the Italian world. Marco Polo was the true predecessor of Columbus. From an early time we find direct evidence of his influence on the process of exploration. In 1426, the Infant Peter of Portugal, elder brother of the celebrated Infant Henry, then sojourning in Venice, was presented by the Signiory with a copy of Marco Polo's work. Wherever the Italian captains went, the fame of the great Venetian's explorations was noised abroad: and, as we shall presently see, the Italian captains were the chief directors of navigation and discovery in every seaport of Western Europe.

His book.

The work dictated by Marco Polo to his fellow-captive, though based upon his travels both in form and matter, is no mere journal or narrative of adventure. A brief account of his career in the East is indeed prefixed, and the route over which he carries his reader is substantially that chronologically followed by himself; for he takes his reader successively overland to China, by way of the Black Sea, Armenia, and Tartary, backwards and forwards, by land and sea, throughout the vast dominions of the Grand Khan, and finally homeward by the Indian Ocean, touching by the way at most of those famous countries which bordered thereon. Yet the book is no book of travels. It is

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rather a Handbook to the East for the use of other European travellers, and was clearly compiled as such and nothing more. Perhaps no compiler has ever laid down a clearer or more practical plan, adopted a more judicious selection of facts, or relieved it by a more attractive embroidery of historical anecdote. It may be said that Marco Polo conveys more information, page for page, than any of his followers in the same walk, and is entitled to be ranked foremost as well as first among the handbook writers. It is not here to the purpose to dwell on his notices of Armenia, Turcomania, and Persia: his descriptions of the cities of Bagdad, Ormus, Tabriz, and many others, or to follow him to Kashmir, Kashghar, and Samarkhand, and across the steppes of Tartary. The main interest of Marco Polo lies in his description of the Grand Khan's Empire, and of those wide-spread shores, all washed by the Indian Ocean, which from Zanzibar to Japan went by the general name of India. More properly they might be called the Indias or Indies: for Marco Polo speaks of a Greater, a Lesser, and a Middle India.

The Grand Khan.

The Pope alone, among European potentates of the fifteenth century, could be ranked as approaching in state and dignity to the Tartar sovereign of China. For any fair parallel, recourse must be had to the Great Basileus of Persia: and in the eyes of his Venetian secretary the Grand Khan appeared much as Darius or Cyrus may have appeared to the Greek adventurers who crowded his court, and competed for the favour of a mighty barbarian whom they at once flattered and despised. Without attempting any general description of the curious and minute picture which Marco Polo has given of his empire and the system of policy by which it was supported, of his councils and armies, his parks and palaces, of the splendid and ceremonious court which attended him, we may notice briefly the attitude assumed by the Grand Khan towards Christianity, which was widely spread, in the Nestorian form, both in India and in China. In one respect, it might seem, its progress had been such as to prejudice the prospects of friendly intercourse with Christendom. A cousin of the reigning

Khan Kublai, named Nazan, had unsuccessfully disputed the great heritage of Ginghis at the head of an army of 400,000 horse. Himself a Christian, he reckoned large numbers of Christians in his ranks, and even ostentatiously displayed the banner of the Cross on the field of battle. The victory of Kublai over this Christian rival seemed to bring Christianity into contempt: and certain Jews and Mahomedans taunted the Chinese Christians with the disgrace which had befallen the banner which they reverenced. Complaint was made to Kublai, who administered to the scoffers a stern reproof. 'If the Cross of Christ,' he said, 'has not profited the party of Nazan, the effect is reasonable and just. He was a rebel and a traitor to his sovereign: and to such wretches it could not afford its protection. Let none therefore presume to charge with injustice the God of the Christians, who is Himself the perfection of goodness and of justice.' Kublai, undoubtedly from political motives, practised toleration to an extent which might have rejoiced the heart of a philosopher: and treated all religions existing in his dominions with even-handed respect. At Easter and Christmas the following ceremony was observed. After commanding the attendance of all Christians about the court, he sent for the book of the four Gospels. Having caused it to be repeatedly perfumed with incense, he kissed it with devotion, and directed that the same should be done by all the nobles present. He observed a similar ceremony at the chief festivals of the Mahomedans, Jews, and Idolaters. 'There are four great Prophets,' he was wont to say, 'who are reverenced and worshipped by the different classes of mankind. The Christians regard Jesus Christ as their divinity: the Saracens, Mahomed: the Jews, Moses: and the Idolaters, Sogomombar-Khan[1]. I honour and respect all four, and invoke to my aid whichever of them is really supreme in heaven.' But among these four faiths Kublai seems to have had a leaning to Christianity. What chiefly restrained him from openly embracing that faith was the inability of the Christians to work such

[1] Sakya-mouni.

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miracles as were practised by the idolaters. 'When I sit at meat,' said Kublai, 'the cups that were in the midst of the hall come to me filled with wine, spontaneously, and untouched by human hands. The priests of the idolaters can drive the bad weather out of the sky, and do many such-like wonders. Their idols have the faculty of speech, and predict whatever is required. If I become a Christian, those who can compass these wonders are not unlikely to compass my destruction.' To this prudent conclusion Kublai added a wish that the Pope would send him a hundred priests able to perform miracles similar to those of the idolaters. Produce a duly qualified Moses, who should outdo the Egyptians in their enchantments, and Pharaoh's heart would be no longer hardened. He would then believe the allegation that the Christians possessed equal power with the idolaters, but scrupled to exercise the devilish agencies required for its demonstration. He and his subjects would then submit to baptism, and the Christians of China should far outnumber the Christians of Europe[1].

The Chinese Empire.

This favourable disposition towards Christendom on the Khan's part seemed to open a boundless field to the religious enthusiasm, the commercial adventure, and even the political ambition of Europe: and it is easy to understand the effect produced upon Italy in particular by the publication of Marco's travels. Under Kublai, China was at the zenith of its power and prosperity. Then, as now, its vast and productive provinces, stretching from Thibet and Bengal to the Pacific Ocean, were filled with a dense population, everywhere engaged not only in agriculture, but in manufacture and commerce. 'With them,' says Marco, 'no spot of earth is suffered to lie idle, that can possibly be cultivated[2].' Enormous rivers gave access for

[1] Marco Polo, book ii. ch. 1, 2. 'The Tartar rulers,' says Professor Stubbs (Cyprus and Armenia, p. 34), 'received and favoured missions, and protected Christian doctrines, in a liberal fashion, without understanding or finally committing themselves. . . . After dallying with Christianity, the Khans seem to have become finally Mahometan and hostile at the beginning of the fourteenth century.'

[2] Book ii. ch. 20.

ships to the interior: and on these rivers there stood cities far exceeding in number and extent the cities of Europe. The river Kiang, from six to ten miles broad, traversed sixteen provinces, and two hundred cities stood on its banks. Among these was the great port of Singui, where Marco saw fifteen thousand decked sailing vessels, whose burden he estimated at from two hundred to six hundred tons. Other ports counted even a greater number. In the busy population that swarmed on these rivers, the merchandise in course of transport, the noble bridges that spanned them, the continual succession of towns and villages, the broad and massive terraces that lined their banks, their rocky islands and eminences crowned with fortresses, monasteries, and temples, the broad and deep artificial canals by which they communicated, Marco drew a picture well adapted to stimulate the imagination of the speculative citizen of Genoa and Venice. His pages reflected with equal fidelity and picturesqueness the internal economy of these great Chinese towns; their huge market-squares, crowded with buyers and sellers of fish, flesh, fruits, spices, drugs, and wines; the mansions of the wealthy, decorated with painting and sculpture, surrounded by delicious gardens, with their pleasure barges and pavilions on the cool water; the manufactories of wool, of silk, of cloth of silver and gold, and of porcelain; the cottages of the artisans, and the factories in which they were employed. Marco was equally successful in his portraiture of this great empire as a political whole. He described the political machinery by which it was ruled: the great system of posts, by means of which despatches travelled all over the empire at the rate of two hundred and fifty miles a day: the revenue raised by excises and customs only, but so vast that the province of Kinsai alone, of which the accounts had been audited by Marco in his official capacity, yielded annually in cash to the Khan's exchequer sixteen million eight hundred thousand Venetian ducats[1].

[1] Book ii. ch. 69. The true value of the money is not easily estimated. Three pheasants sold for a Venetian groat, and eighty pounds of ginger at the like sum.

Book I. *Discovery.* The Indies.

Marco had brought to the description of the Khan's empire the intimate knowledge of a resident and an official: his knowledge of the remainder of the East was of a less minute and certain sort. It left the more to the imagination of Europe: but it supplied a sufficiently broad and accurate outline. The mysterious India, in its several divisions of Greater, Lesser, and Middle, spanning half the known latitude and longitude of the globe, was conceived and described by him as the basin of the Eastern Ocean. It consisted, on the one hand, of the circuitous coast, African and Asiatic, which bounded that ocean on the west and north, and on the other of innumerable islands of varying magnitude, lying on the surface of that ocean, and stretching in a huge irregular archipelago from Madagascar in the south-west to Japan in the north-east. Through its currents and periodical winds, this ocean had become the highway of the Eastern world, to which it thus communicated an unity which might be compared to the unity derived by ancient Europe from the Mediterranean.

Christianity in the Indies.

In many places, throughout this vast tract of the earth, Christian communities existed. The great semi-continental islands of Madagascar and Zanzibar in its western extremity were indeed peopled by Mahomedans and Idolaters. But three out of the six kingdoms of Abyssinia, the importance of which elevated it to the rank of the Middle India, were Christian. Christian pilgrims still approached the coast of Ceylon, and contemplated with veneration the lofty peak on which the father of mankind had alighted when he was cast down from Paradise; and flocked to the burial-place of the apostle St. Thomas, where an ancient Christian church still looks down from its solitary eminence on the plains of Arcot. But the great seat of Indian Christianity was the opposite coast of Malabar. Here, from Goa to Cape Comorin, the native Nestorians subsisted as an important caste, under the name of Christians of St. Thomas, from the apostolic propagation of the faith down to the Synod of Odiampoor in 1599, when Spanish bigotry forced them to conform to orthodoxy. Their churches, it was true, differed but little from heathen pagodas, their ritual was

coarse and indecorous, and their moral condition was not superior to that of their idolatrous neighbours[1]. But they maintained the essentials of the Christian faith, and were prominent in the eye of Europe as a link of connexion with the unknown East. The coast on which they dwelt was of the first commercial importance. It was the goal of the famous expedition of Vasco da Gama: and had the Hispano-Indian theory turned out to be correct, it would have been sought with equal eagerness by Columbus. The Red Sea completed the connexion between Indian and European Christianity. Christian churches and monasteries stood here and there on its shores, from the peninsula of Sinai to its mouth: and at its southern extremity, where the seaman bound from Suez to the Malabar coast spreads his sails to the monsoon, was the island of Socotora, entirely inhabited by a half-savage Christian population, whose rude churches glittered conspicuously on its rocky coasts[2]. Here, as in the remote West and East, the saints were invoked, the cross was venerated, and the ancient liturgy was repeated: and there was no part of the Indies where the Christian adventurer might not reasonably expect to meet with a friendly reception.

Marco's knowledge of India.

Of the Great India the pages of Marco enabled the European reader to form an accurate idea. Its northernmost point was the mouth of the Indus. The great kingdoms of Cambay and Guzerat, where the pole-star appeared to have six fathoms of altitude, yielded the trader ginger, pepper, indigo, cotton, and hides. To the south lay the kingdom of Malabar, for centuries the central attraction of the European merchant. Here were manufactured the finest cotton stuffs in the world. Hither traded the ships of China, bringing with them precious drugs, cloth of silver and gold, silks and gauzes, and gold and silver in bullion, to be afterwards dispersed in part by way of Aden and

[1] La Croze, Hist. du Christianisme des Indes (1724).

[2] Carvalho, Roteiro de Dom Joam de Castro da viagem &c., no anno de 1541. The ecclesiastical centre of Indian Christianity had been in the Euphrates valley. The Malabar Churches acknowledged the supremacy of the Patriarch of Mosul: and Castro reports that the liturgy of Socotora was in the Chaldee tongue.

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Alexandria to the world of Europe. Short as Marco's stay in any part of India must have been, he had seized with wonderful acuteness the main aspects of Indian life. The court and domestic life of the Indian princes, the feudatories who surrounded them, the sanctity and strange arts of the Brahmins, the characteristics which betokened the different castes, the idol temples with their bands of female devotees, the naked fakeer wearing on his forehead the symbolic ox, are described by Marco with close fidelity. But the attention of Europe was concentrated with peculiar interest on that vast archipelago of twelve thousand islands which lay about the south-eastern extremity of the continent. Among these islands, Sumatra, Borneo, and Japan were known to Marco in abundant detail. In the Lesser Java, by which name Marco designated the great island of Sumatra, he had sojourned in a large fortified camp, surrounded by two thousand followers, for five months. He describes it as divided into eight kingdoms, differing in population and language, but all rich in exportable produce. Borneo, known to him as the Greater Java, and the greatest island in the world, was subject to a single king. 'The country,' says Marco, 'abounds with rich commodities. Pepper, nutmegs, spikenard, galengal, cubebs, cloves, and all the other valuable spices and drugs, are the produce of this island, and cause it to be frequented by many ships laden with merchandise, that yields to the owners great profit. The quantity of gold collected there exceeds all calculation and belief. From thence it is that the merchants of Zaitun and Manji in general have imported, and import to this day, that metal to a great amount, and from thence also is imported the greatest part of the spices that are distributed throughout the world[1].' But none of the islands could equal the attractions of Zipangu, or Japan, lying fifteen hundred miles to the east of China. The Great Khan himself, tempted by its wealth, had once fitted out an armada for its conquest. 'They have gold,' says Marco, 'in the greatest abundance. Its sources are inexhaustible. But as the king does not allow it to be exported, few

The Indian Archipelago.

[1] Marco Polo, book iii. ch. 7.

merchants visit the country, nor is it frequented by much shipping from other parts. To this circumstance may be attributed the extraordinary richness of the sovereign's palace, according to what we are told by those who have access to the place. The entire roof is covered with a plating of gold, in the same manner as we cover houses, or more properly churches, with lead. The ceilings of the halls are of the same precious metal: many of the apartments have small tables of pure gold, of great thickness: the windows also have golden ornaments. So vast indeed are the riches of the palace, that it is impossible to convey any idea of them. In this island there are pearls also, in large quantities, of a red colour, round in shape, and equal in value to or even exceeding that of the white pearls[1].' Of Little Cathay, Argyre, Candym, and Anjama, it is hardly necessary to speak. 'The number of islands in this wondrous archipelago was calculated at twelve thousand seven hundred. No doubt was entertained as to the enormous wealth of these islands, though some geographers adopted a lower reckoning. The Catalan Atlas of Paris estimates the total number of isles at seven thousand five hundred and forty-eight: Martin Behaim or Böhme, the celebrated geographer of Nuremberg, maintains the number to be twelve thousand seven hundred, rich in mountains of gold, pearls, twelve sorts of spices, and marvellous human beings[2]. Such was the prospect which attracted the explorer who had exhausted the easterly waters of the Atlantic.

Travellers of the fourteenth century. Conti and Mandeville.

The flame which Marco had kindled was not suffered to expire. Monks and commercial adventurers followed in his track. Pilgrims from the West, seeking the Holy Land in ever-increasing numbers, encountered pilgrims from the East, and eagerly questioned them as to the wonders of which Marco had written. The travels of Nicolo Conti, first printed in the time of Columbus, though widely circulated in manuscript long before, amply confirmed Marco's

[1] Marco Polo, book iii. ch. 1.

[2] Humboldt, volume i. pages 26, 27: 'Mit vil Edelgestain, Perlen, und Goltpragen, 12-lei spezerey und wunderlichem Volck, davon lang zu schreiben.'

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account[1]: but the chief authority on the East in the fourteenth and following centuries was the book of Sir John Mandeville[2]. Marco Polo had written a Handbook to the East for the use of wandering commercial adventurers: Mandeville wrote for the general benefit of Christian pilgrims. His reputation would have stood higher, had he confined his narrative to the neighbourhood of the Holy Land, with which he was personally familiar. But he felt bound to satisfy the curiosity of Europe as to the marvellous regions beyond: and his account of the fabled wealth of the Grand Khan's court outdoes the Arabian Nights. Pillars of gold, pavements of silver, thrones of jasper, tables and goblets of entire precious stones, are the least among its wonders. We hear of rubies and carbuncles half a foot long, and shedding light in the dark: of golden vines, laden with clusters of beryl and topaz: and of golden birds, made to sing and clap their wings by means of the art magic. The Khan rides in a chariot made of wood hewn in the Terrestrial Paradise. Hither the traveller confesses that he had not penetrated: but wise men assured him that it nearly touched the orbit of the moon, and that its portal was still guarded by fiery cherubim. Columbus, as is well known, believed in this fabled Terrestrial Paradise. He even supposed that he had found it on the coast of Paria in 1498. Like Mandeville, he suffered this idle tale to override the authority which declared the earth to be a sphere, and believed it to be pear-shaped[3]. In Mandeville we first trace the fable of that Fountain of Perpetual Youth which the Spanish adventurers afterwards sought in the forests of Florida[4].

Popular cosmography of the

That Columbus often pored over the pages of Mandeville would be probable even if we had not express testimony

[1] Poggius, De Varietate Fortunae; see Kunstmann, Kenntniss Indiens, 13. Conti's travels became better known after the middle of the sixteenth century, when they were published by Ramusio.

[2] 'Perhaps the most popular work of the fourteenth and fifteenth centuries,' says Mr. Wright, Early Travels in Palestine, p. xxvii.

[3] See post, p. 162.

[4] Mandeville, c. xv: 'I have drunk thereof three or four times,' says the veracious traveller, 'and methinks I still fare the better.'

to the fact, on the part of a personal acquaintance. Ptolemy and Mandeville, says the Curate of Los Palacios[1], were his favourite authors: and the latter formed a natural supplement to the former. His pages contained very substantial attractions for the studious cosmographer. The English knight, who is commonly regarded as a mere lying traveller, was in truth both faithful and sagacious, within the sphere of his own observation, and had verified the altitude of the pole-star by the astrolabe in various latitudes, from Brabant to Egypt. Like many an Arab sailor, he had gazed on the Southern Cross; and he claims to have beheld three-fourths of the whole firmament depicted on the celestial globe. He saw good reason to reject the traditional estimate of the earth's circumference, at about 20,000 miles, and believed the length of a great circle to be 31,500 miles. The surface of the sphere he believed to be accessible in all its parts. 'Men may prove,' he says, 'by experience and understanding, that if a man found passage by ships, he might go by ship all round the world, above and beneath. . . . Men may go all round the world, as well under as above, and return to their country, if they had company, and shipping, and guides: and always they would find men, lands, and isles, as well as in our part of the world. For they who are towards the Antarctic are directly feet-opposite-feet of them who dwell under the polar star: as well as we and they that dwell under us are feet-opposite-feet. For all parts of sea and land have their opposites, habitable or passable.' This opinion Mandeville illustrates by a story which he had heard in his youth, concerning a certain man who departed from England to go and discover the world. 'He passed India, and the isles beyond, which are more than five thousand: and so long he went by sea and land, and so environed the world by many seasons, that he found an isle where he heard the people speak his own language, calling on oxen in the plough such words as men speak to beasts in his own country, whereof he had great wonder, for he knew not how it might be.' 'But I say,' says Mandeville, 'that he had gone so long, by land and sea, that he had gone all

[1] Bernaldez, Cronica de los Reyes Catolicos, c. 118.

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round the earth, that he was come again to his own borders, if he would have passed forth till he had found his native country. But he turned again from thence, from whence he was come: and so he lost much painful labour, as himself said, a great while after, when he was coming home: for it befell after, that he went into Norway, and the tempest of the sea carried him to an isle: and when he was in that isle, he well knew that it was the isle where he had heard his own language spoken before, and the calling of the oxen at the plough [1].'

Significance of this legend.

The most sceptical critic cannot doubt that this quaint legend has a real significance; and when properly read it forms a link, though but a slight one, between two of the historical processes now in course of description. In its pages which immediately follow will be found the story of the discovery of the great tracts of North-eastern America by the Northmen, three centuries before the time of Mandeville. The full circumstances of that discovery were only to be heard of in the Sagas of Iceland: but a description of one fertile isle, which they had reached, had penetrated to the world of Southern Europe. It was this isle, known by the name of Wineland, from the wild grape in which it abounded, which the Englishman of Mandeville's legend was supposed to have reached by way of the East. It was this isle which the seamen of Bristol and Lisbon were seeking year after year while Columbus was meditating his westward voyage. It was this isle that John Cabot reached by command of Henry VII, when the world was wondering at the great feat of Columbus: and this isle undoubtedly represented the shores which in after years received the colonies of New England. This I shall now proceed to show, after briefly remarking on the economical and political impulse which at length turned the first historical process into a practical reality.

Economical condition of Europe.

In the fifteenth century, the trade of Europe with India had recently undergone a vast increase. The balance of trade was in favour of the East: besides the valuable exports of Europe, such as iron, copper, quicksilver, timber,

[1] Mandeville, ch. xvii, apud Wright, Early Travels in Palestine, p. 221.

slaves, and corn, the ships of Venice alone brought yearly 300,000 ducats in coin to Alexandria. This is but one instance of an extensive process: and from it we may gather some idea of the extent of this drain of bullion from the West to the East. Such a drain the scanty mines of silver in Europe were totally unable to support. The growth of the indirect Indian trade thus naturally led to a serious and perplexing dearth of the precious metals. In the fifteenth century, the purchasing power of gold and silver in Europe was double the same power in the century preceding: and the produce of Europe was universally depreciated in a corresponding degree. Some direct communication, if possible, of Europe with the East, leading to a readjustment of this disturbed balance, thus became an economical necessity[1]. Such a communication had the explorers of Portugal been long striving to secure, under the direction of the enterprising Infant Henry, surnamed the Navigator. Year after year did these hardy seamen push the advanced posts of maritime discovery farther and farther to the south: and each of these advances was looked upon as an advance on the road to India, as a step in a movement destined to turn the flank of the Mahomedan possessors of Aden and Ormus, and to put the Christian people of the West in direct connexion with the East.

Political condition of Western Europe.

It was obviously the maritime states of Western Europe, and no other, that were concerned with the results, whatever they might be, of enterprise in the Atlantic. It was the interest of those on the Mediterranean Sea to maintain the existing state of things. But in England, France, and the Spanish peninsula, political ideas combined with the economical necessity already described to force on the experiment which during so many centuries had remained in suspense. These countries were at the close of the fifteenth century one and all in the possession of sagacious, ambitious, and powerful sovereigns, each inspired to new enterprises by recent successes, and jealous of the advantages which had been gained by the other. Henry Tudor

[1] Peschel, Zeitalter der Entdeckungen, book i. ch. 1; Tooke, History of Prices, vol. vi. pp. 391, 392.

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had terminated a long and bloody struggle by consolidating the forces of England, and wielding them at home and abroad with signal and uninterrupted success. The successes of Louis in France, whose policy exalted a ruined province into a first-rate power, had been even more conspicuous. Ferdinand of Aragon had founded a great monarchy in the Spanish peninsula, which was in a few years destined to overshadow the entire Christian world. Political events had already indicated the kingdoms of the West as the coming powers, and it was their obvious destiny to work out the change which impended over Europe. In all of them the necessary elements—the spirit of mercantile speculation and of territorial aggrandisement—abounded in over-measure.

Character of the first historical process.

Such was the stage reached in the first of these historical processes. On reviewing its progress, it cannot escape notice how little advance was made upon that one random thought which had occurred to some nameless Greek in the foolish infancy of human knowledge. Like some star of low magnitude, that thought had faintly glimmered, often obscured and forgotten, across the barren waste of two thousand years. The true conjecture, that of a plurality of habitable worlds, had passed into the region of poetry and mythology. The circumstances of the fifteenth century forced the Hispano-Indian theory into prominence. Many impulses combined to urge Europe towards India: and the progress towards India precipitated Europe on the vast barrier of the American continent. Had the Hispano-Indian theory proved correct, no result could have followed save failure. To conquer and convert to Christianity the great civilised nations of Eastern Asia, and to secure the golden treasure so long and eagerly sought, would have proved an undertaking beyond the resources of any European nation. For this hopeless task the discovery of the New World substituted one easy of achievement, and productive of the desired result in a degree exceeding all expectation. Thus, while the completion of the first historical process exposed the false base upon which it rested, it had a practical result which the

second historical process, consisting of an undoubted series of actual discoveries, had failed in reaching. For this second process, as we shall now see, had produced an European discovery of America four hundred and fifty years before Columbus, and a knowledge of the New World had ever since existed in unbroken tradition. Unlike the first process, literature and philosophy had here no part. The first discovery of America was simply due to the restlessness of the ignorant seamen of the North. These rude beings unconsciously demonstrated the Aristotelian theory of more habitable worlds than one, and consummated the prophecy of the Roman poet that Thule should one day no longer be the last place on the map.

Second historical process. Explorations northwards from the North and Baltic Seas—Thule.

This second historical process, consisting of the discoveries of explorers in the North-west, may thus be traced also to classical times, and is properly a legacy to the modern world from imperial Rome. It remounts, indeed, to an earlier source. Pytheas, the famous navigator of Massilia, after coasting the eastern shores of Britain had made his way to the Faeroe isles. Six days' voyage beyond the Faeroe isles he reached Thule. The distance from the Faeroe group, together with the fact that Thule was so large as to make it doubtful whether it were island or continent, clearly indicates Iceland as the Thule of Pytheas. The Romans, however, bestowed the name of Thule upon the remotest island they succeeded from time to time in reaching: and we accordingly find the groups intermediate between Britain and Iceland sometimes dignified with the title that properly belonged to the uttermost island of the earth. The Thule of Pliny and Tacitus must apparently be sought in the Shetlands: the principal island in the Faeroe group was the Thule of Ptolemy. Iceland, notwithstanding, was within the knowledge of the ancient world. It became, in after times, the high road to America: and the terminus of the ancients was thus turned into a point of departure for the moderns[1].

[1] The older Northern writers rightly identify Thule with Iceland. See Adam of Bremen, De Situ Daniae, p. 33 (Elzev. 1629). The more learned Arngrim Jonas first questioned what he calls 'irrefragabilis historiarum consensus' on that point, and placed Thule elsewhere, to the southward.

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Discovery.

The Northmen in Iceland.

The line of desultory exploration represented by the successive points or stations of Britain, the Shetlands, Faeroes, and Iceland was continued in a few centuries with greater vigour and effect from a fresh starting-point. The shores of the Baltic, all peopled by branches of the same energetic race, began in the ninth century to send forth vast numbers of adventurous emigrants. One stream of this great emigration naturally found its way to England: a second struck the north of Scotland and the Shetlands, and passed on, in the old Roman channel, to Iceland. When Ingolf, the son of Örn, reached Iceland in 874, he had unwittingly bridged over the gulf between Europe and America. That Iceland belongs geographically not to Europe, but to America, is obvious from the map. It belongs to America by its geological conformation[1]; and its discovery and colonisation were in truth the beginnings of the discovery and colonisation of the New World. The wave spread westwards: but it was arrested, failed in its effects, and died out, leaving Iceland a living monument of a civilisation which otherwise might in the natural course of things have overspread the north of America. We have seen that the Columbian discovery of America was the result of two factors, one being geographical speculation as to the relative situation of the western coast of Spain and the eastern coast of Africa, the other the increased demand for communication with India produced by the conditions of European life in the fifteenth century. The Scandinavian discovery was similarly produced by two factors. One of them was the geographical conformation of the narrowed channel of the Atlantic between the 58½° and 64° parallels of latitude, the other the restless activity of the Northmen of the tenth century. From the day when the Northmen first landed on the coast of Iceland, their reaching the coast of New England was only a question of time. The enterprise involved in this gradual process was far less than that which carried these same Northmen to Neustria, Spain, Italy, and Greece, and inspired them to attack

[1] Unger, Die versunkene Insel Atlantis, 17. Gomara (book i. c. 11) includes Iceland in America.

the ancient civilisation of Southern Europe in its strongholds[1].

Iceland was the first European colony, and the true prototype of America. In the tenth century it had a prosperous Christian population, with a firm republican government. It developed an independent national spirit, trade, and literature: it had a culture which has been pronounced to be far in advance of Southern Europe. Such conditions were favourable to an extension of boundaries. From Iceland the Northmen advanced to Greenland, the nearest promontory of which is distant only fifty-two nautical leagues. Repelled by the inhospitable aspect of the eastern coast, they settled on the western: and between Iceland and the western coast of Greenland a regular communication was soon established. Among the Icelanders who had sought the colonies of Greenland was a wealthy man named Herjulf. He had joined a colony conducted by one Eric the Red. At the time of his quitting Iceland, his son Biarne, an adventurous mariner, who owned a large ship, was absent on a voyage to Norway. When Biarne returned, says the Saga, and found that his father had quitted Iceland, he resolved not to unload his vessel, but to sail straightway to Greenland, that he might spend the winter as heretofore under his father's roof. But neither Biarne nor any of his crew knew the course. 'Witless, methinks, is our forth-faring,' spoke Biarne, 'seeing that none of us have seen the Greenland sea.' Nevertheless, they sailed, and in three days lost sight of land. The wind now shifted northwards; and fogs came on, lasting many days. At length the weather changed; the sun came out: and the same day towards evening they saw land. But Biarne saw that this land was not that land of icy mountains of which they were in search. The crew asked, whether they should make land or no. Biarne

[1] While the Northmen were exploring the coasts of America, others of their race were engaged in that continuous invasion of England which resulted in the Danish dynasty. Others were sailing up the Guadalquivir and plundering the Moors in Andalucia. Spain seemed permanently annexed to Africa: Genoa had not emerged from obscurity: the maritime revolution was not begun: none of the causes of the Columbian discovery had come into existence.

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gave orders to keep clear of the shore, and to coast away northwards, leaving the land on the left. As they sailed thereby, they saw that it was no land of mountains, but of gentle hills, covered with wood. Thus they sailed a night and a day, whereby they came to a second land, like to the former. 'Is this, then, Greenland?' enquired the crew of Biarne. 'Nay,' said he, 'I think not, any more than the other: for in Greenland, they say, there be very great ice-hills.' As they approached this second land, they perceived it to be flat, and covered with wood, like the former. The wind dropping, the sailors proposed to make the land. Biarne refused. The sailors alleged that they lacked wood and water. 'Of none of these things have ye lack,' said Biarne. The sailors murmured, and turned the vessel's head once more to sea. A wind springing up from the south-west, they sailed on for three days longer, after which they came upon a third land, mountainous and covered with ice. Once more the sailors asked whether they should make land here. 'Nay,' said Biarne, 'small promise, methinks, is there of this land.' And as they passed along they perceived it to be an island. As they left this mountainous land behind, the wind increased. Two more days they went on with shortened sail, until they perceived a fourth land. Once more the crew enquired, whether this was Greenland? 'Yea,' answered Biarne, 'it is the very place: thus hath Greenland been described: here must we hold land.' Towards evening they made land: it was Herjulfsnes, the home of Biarne's father: and here Biarne landed with great joy, and fixed his dwelling for the rest of his days. Such is the story of the first discovery of America by Europeans in the year 986[1].

The Arctic Current.

Every skipper in the whaling trade is well acquainted with the physical force which carried Biarne, unguided by the compass and without practical knowledge of his course, to the south-west. Southwards from the Arctic Circle, between Iceland and Greenland, there sets a perpetual and violent current of cold water. Joining the current from

[1] Rafn, Antiquitates Americanae, xxix. pp. 17–25.

Baffin's Bay in Davis's Straits, it sweeps on, ever southward, washing and chilling the whole shore of North America. As it advances through milder latitudes, its force, volume, and breadth decrease, and it ultimately disappears before the warm Gulf-Stream, pressing its way to the north, and carrying the temperature of Florida to the shores of Ireland and England. On this Arctic current Biarne's vessel drifted to the shores of New England[1]. The first of the three physical channels of communication between the Old World and the New was thus opened, and one of the historical processes of which mention has been made was completed.

Leif Ericson—Discovery of Helluland and Markland.

Though Biarne Herjulfson never again sought the lands which he had thus accidentally touched, he made no secret of his discovery. On a visit which he made some years afterwards to the court of Eric, Earl of Norway, there was much talk of his discoveries, and he was blamed for not pursuing them. The like happened in Greenland: and at length Leif, the son of Eric the Red, who had founded the colony, bought Biarne's vessel, and hired a crew of thirty-five men, to go in search of these new lands which Biarne had found. Leif begged his father Eric to embark and share the venture with him. The old man excused himself, alleging that he was no longer able to bear the toils of the sea. Yet he yielded, and mounted his horse to ride down to the shore. But as he rode, the horse stumbled, and the old man fell. Then said Eric, 'Fortune will not that I find any more lands than this where we dwell; no more shall we fare forth together:' and he returned home. But Leif led his thirty-five men to the ship: and among them was a man of the south[2] called Tyrker. Then they sailed to sea, and

[1] Until the recent observations of Commodore Irminger, of the Danish navy, the explanation of Biarne's voyage appeared even more simple, for it was always supposed that the Arctic drift from Spitzbergen passed straight from East Greenland in a S.W. direction to the coast of Labrador. Irminger has shown that this drift passes round Cape Farewell, and up the Straits, where it meets the Baffin's Bay current.

[2] Suðrmaðr, vir australis—proprie de Germanis usurpatur (Rafn). Handelmann, Gesch. d. Am. Kolonisation, I. 7, conjectures the name Tyrker to be nothing but 'Tydsker,' the Norse for 'German.'

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soon beheld the land where Biarne had last touched before reaching Greenland. Having steered thither, they anchored, and went ashore in their boat: but they found no grass in the place. All the high lands were covered with ice-hills. Between the ice-hills and the sea was a wide plain covered with flat slate-like stones: wherefore they judged this a barren land. Then spake Leif: 'It is not with us as with Biarne, that we should have nought to do with this land: now will I give the land a name, and call it HELLU-LAND (Land of Flat Stones).' Then they went back to the ship, and having set sail again, found another land. Hither also they steered, and having anchored, let down the boat, and landed. This land was low, flat, and covered with wood: and in many places where they went the shore sloped up, being covered with white sand. Then spake Leif: 'This land shall be named from that wherein it aboundeth, and shall be called MARK-LAND (Wood-land).' Then they quickly returned to the ship, and again put out to sea, with a fair north-east wind.

Discovery of Wine-land.

Having sailed a night and a day, they again beheld land. On approaching it they reached an island lying off the main-land towards the north. Here they landed, and viewed the place, the air being calm: and seeing the grass covered with dew, they drank thereof, putting the hand to the mouth, whereby they tasted in the dew a strange sweetness. Then returning to their ship, they sailed through a strait lying between the said island and a certain ness of land jutting northwards; and sailing to the west passed by the said ness. Here, when the tide was low, were vast shallows: insomuch that when the ship grounded, they saw the sea at a great distance. But so eager were they, that not being content to wait until the return of the tide, they landed in their boat at a place where is a river running out of a lake. When the tide rose, and their ship was afloat, they took their boat and rowed thereto, and brought the ship first into the river and then into the lake. Here they cast anchor, and unloading their baggage they built huts: and afterwards, resolving to winter there, they built larger houses. Both in the river and in the lake was

abundance of salmon, and those larger than they had before seen. And of such excellence was the soil that it was clear that cattle might subsist there in the winter, the weather not being cold, nor the grass withered. And there the days were more equal than in Iceland and Greenland: when the day was shortest the sun was above the horizon from half-past seven in the morning until half-past four in the afternoon. Having finished their houses, Leif spake to his men: 'Now methinks we ought to part into two bands, for I would fain search out the land. Let one band remain here for the day, and the other band search out the land. But let them not go so far that they may not come back at night, nor let them part company.' And so did they for many days, Leif doing likewise, and going out with them one day to search, and the next remaining at home. He was a strong man of great stature, in all things prudent and moderate. Now one evening a strange matter happened. One of the company, namely Tyrker, the man of the south, was missing. Therefore Leif was sad, for Tyrker had long lived with Leif and his father, and had greatly loved Leif being a boy. Wherefore Leif bitterly chid his comrades, and made ready with twelve men to seek him. But when they had gone some little way from the house, Tyrker met them, and they greeted him joyfully. Now Tyrker was of erect face, with quick rolling eyes, small features, short stature, and thin body: and well skilled in all handicrafts. Then spake Leif to him: 'Why, my foster-father, comest thou so late, and art parted from thy comrades?' Then he at first spake in the German tongue, rolling his eyes, and making strange grimaces: and what he said they wist not. Then after a space he spake in the Norse tongue: 'I was no great way hence — but I have news to tell — I have found vines, and grapes thereon.' 'Is this true, my foster-father?' said Leif. 'True indeed,' said he, 'for in my native land is no lack either of vines or grapes.' Then they slept: and next morning Leif spake to his crew: 'Now must we do two things: pluck the grapes, or else cut down the vines, and also fell wood to load my ship.' Thus they did, and loaded the ship's boat with the

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grapes. Then they felled the timber to load the ship, and in the spring they made ready and sailed away from this land; and Leif named the land from its goodness and called it WINE-LAND[1].

Localities of the Norse Discovery.

The coasts reached by the Northern adventurers are here described so accurately as to leave no doubt of their identity. Hellu-land obviously includes the southern parts of Labrador and the island of Newfoundland. Mark-land can only be the wooded coast of Nova Scotia. Wine-land is New England. The island lying off the mainland is the island of Nantucket, where the honey-dew may still be tasted: the ness of mainland lying opposite and jutting northwards is the peninsula of Cape Cod. The bay which was reached by passing between the two is the exquisite Narraganset Bay: the place of landing in the ship's boat is the mouth of the Pocasset River. The scene of Leif's winter sojourn thus appears to have been some part of the State of Rhode Island. His observations on the natural products of the country, and on the length of the day, tally with this conclusion: and no doubt can be left on the mind of the candid enquirer that the first part of the American continent inhabited by European sojourners was in the heart of the fertile region which afterwards became famous by the name of New England[2].

Voyages to Wineland.

The further intercourse of the Northmen with America concerns the antiquary rather than the historian. It resulted in no permanent settlement: for the age of European settlements beyond seas was not yet come. Besides, the country was already inhabited. A dwarf species of men, by the Norsemen called Skrellings, and apparently wild men of the Esquimaux race, dwelling in caves, peopled New England, and in sufficient numbers to discourage colonisation. In 1002, Leif's brother Thorwald sailed to the new land. He also went in Biarne's old ship: and in the two fol-

[1] Rafn, Ant. Am. pp. 26–37.

[2] The only alternative theory is that of Hugh Murray (Historic Account of Discoveries in N. America, vol. i. p. 21), who admits the authenticity of the Norse relations, but maintains that Wineland is simply the southern part of Greenland. It would be more rational to dismiss the whole account as a tissue of fables: but this is no longer possible.

lowing years made some remarkable explorations. Thorwald made for the place where his brother had wintered, and which his companions denominated LEIF'S-BUÐIR (Leif's booths or huts). He spent the summer of the year 1003 in exploration to the southward; and the great island which he describes as lying west and east could be no other than Long Island. In the following summer Thorwald explored towards the north. To Cape Cod he gave the name of KEEL-NESS; thence he sailed west and reached a promontory, in the neighbourhood of Boston, which may have been Gurnet Point or Cape Alderton. On landing here, Thorwald was fain to ejaculate, 'Right fair is this land, here would I fain build my dwelling.' But this fair land was fatal to the explorer: for here he was slain by an attack of the native Skrellings, and buried with a wooden cross at his head and feet: hence the place was called CROSS-NESS. In 1007 an attempt at settlement was made on a greater scale. Three great ships, with a hundred and sixty men, sailed from Greenland for Wineland, where they built houses and wintered; but departed in the next year, in consequence of the continued attacks of the Skrellings[1]. Such seems to have been the fate of all attempts at settlement: and the occasional voyages which are recorded had for their object fishing and the felling of timber. The Scandinavian discovery of America had thus no permanent results, and long before the time of Columbus the very names of Wineland and Markland survived only in Icelandic history. The extinction of the Scandinavian settlements in Greenland put an end to all communication with America. The last voyage to America recorded in the ancient Icelandic manuscripts took place in 1347. Less than a century afterwards the Greenland settlements had ceased to exist. Men of science reject the legend that they were destroyed by a climatic revolution which turned a green and agreeable land into an icy waste; and the researches of antiquaries disclose the fact that about 1418 the Skrel-

[1] See the Saga of Thorfinn Karlsefn in Rafn, pp. 84–200. From Thorfinn's son Snorri, born in Wineland in 1008, was descended the celebrated sculptor Thorwaldsen. See the genealogical tables, Nos. viii and ix, in Rafn, sub fin.

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lings, ever irreconcilably hostile to the Northmen, attacked and destroyed the chief settlements, and carried away the colonists into slavery[1].

Authentication of the Norse discovery.

The voyages of the Northmen to America thus passed out of the region of contemporary fact into that of history and song[2]. Of their authenticity no doubt remains. They are mentioned in no less than seventeen ancient Icelandic documents. In no instance are the statements thus chronicled improbable or repugnant to known facts: on the contrary, most striking facts in the natural history of the new continent were placed on record by the Northmen[3]. Adam of Bremen, writing in the twelfth century, speaks of the productive island newly found in the ocean as a matter of certain knowledge from Danish sources[4], and mentions the voyages of Frieslanders thither in the century preceding. Speculation was even rife as to the cosmographical significance of these discoveries: for one document mentions that some conjectured Wineland to form part of Africa: and it may be fairly concluded that these geographical facts were extensively known in Iceland and Norway, and not unknown in the numerous parts of Western Europe where there existed communication with Iceland. The connexion of Cabot with Denmark, and his voyage to America by way of the old Norse route, indicate unmistakeably that neither the New-Land nor the way thither was forgotten in the time of Columbus. Some considerable lands to the south and west of Iceland, lying between that island and the northern coast of Asia, are

[1] Letter of Pope Nicholas V to two Icelandic bishops, dated 1448, discovered by Mallet in the archives of the Vatican.

[2] See the poem *Finnur hin frugi*, Rafn, Ant. Am. p. 319. There is a spirited translation in Toulmin Smith's 'Northmen in New England.'

[3] The Northmen noticed the vine, self-sown corn, the maple, different kinds of game, eyderducks and other birds, salmon and other fish. The wild vine, of which seven different species are indigenous to New England, is perhaps the most decisive instance, for the Northmen had no vines in their own country.

[4] 'Praeterea unam adhuc { insulam / regionem } recitavit, a multis in eo repertam oceano, quae dicitur Winland, eo quod ibi vites sponte nascantur, vinum optimum ferentes. Nam et fruges ibi non seminatas habundare, non fabulosa opinione, sed certa comperimus relatione Danorum.' Facsimile of the Codex Vindob. apud Rafn, Ant. Am.; De Situ Daniae, p. 37 (Elzev. 1629).

clearly drawn on the globe of Martin Behaim, made in the very year of the Columbian discovery: and in the next century we have authentic Icelandic maps, displaying the Norse discoveries in their proper geographical relation to Greenland, and exhibiting the 'Promontory of Wineland' in a latitude far to the south of Great Britain. The publication by the Norse historian Torfæus, in the beginning of the last century, of the substance of the original legends, was undoubtedly a surprise to those who had habitually dated European knowledge of the New World from the discovery of Columbus, but it merely popularised for the rest of Europe facts already familiar to Northern antiquaries: and this continuity of the story of the Norsemen in America is an additional guarantee of its perfect authenticity[1]. The authenticity of those reputed vestiges of the Northmen which are yet to be seen in New England is not equally clear. The celebrated 'Old Mill' of Newport is not devoid of resemblance to buildings left by the Northmen in Greenland. But neither this curious structure, nor the inscription of the 'Dighton Writing Rock,' for two centuries the delight and the despair of antiquaries, can be pronounced with certainty to be of Norse origin[2].

Extent of the Scandinavian knowledge of America.

The researches of Scandinavian antiquaries have even reached to the startling conclusion that long before the time of Columbus Europeans had visited the whole coast of North America, from the icy regions explored in our own time by Parry and the Rosses in the North, to Georgia and perhaps Florida in the south. The extreme south

[1] American historians, jealous, though it is hard to see why, for the traditional fame of Columbus, either reject the whole of the Norse discovery as 'mythical,' or dismiss it shortly as having nothing to do with the history of which it really forms an integral part.

[2] The Dighton Writing Rock is on the Taunton river in Massachusetts. It is in fact quite certain that this inscription is of Indian origin. Similar sculptures occur in similar positions on the Ohio river, on a branch of the Tennessee river, in Western Virginia, and other places which the Northmen could never have reached. When a copy of this famous relic was shown to Washington at Cambridge in 1789, he at once pronounced it to be of Indian origin, and compared it with similar inscriptions which he had met with while surveying in the West. Rafn has certainly given the Dighton writing a plausible Norse interpretation: but Count de Gébelin and the learned Dr. Styles have interpreted it with equal felicity as a Phœnician inscription.

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was reported to be peopled by white men, or more probably men who wore white dresses, whence it was called HVÍTRAMANNALAND: other voyagers gave it the name of IRLAND IT MIKLA, or Great Ireland. It has been plausibly concluded that the 'white men' who knew the use of iron, and ruled this remote region, were really Irish emigrants[1]. The supposition, though not wholly improbable, is not likely to be verified: and the evidence in favour of attributing to the first European visitors a knowledge of America, from the tropics to the arctic circle, is far indeed from the certainty with which we are able to pronounce on the authenticity and accuracy of their knowledge of the coasts of Nova Scotia and New England. The significance of these discoveries rests less upon the mass of incident in itself than upon its surviving traditions.

Historical aspect of the Norse discoveries.

The Northmen were apparently the first, among people of historic name, to arrive in America. They were long anterior to the Aztecs, who only appeared on the plain of Anahuac in 1190: and the famous town of Tenochtitlan on the lake of Mexico was founded during the last years of the Norse intercourse, and when the third process of which we shall speak, the rediscovery of the islands of the eastern Atlantic, was commencing (1325)[2]. When this third process was in full action, the Norse discoveries had ceased. Their historical significance, at least as regards America, is but slight. It chiefly consists in the fact that some remembrance of them always survived; that English explorers began in the time of Columbus to follow in the direction they had taken, and that upon the rediscovery of America by these English explorers an English claim to the soil of the Northern continent was grounded; in the reign of Elizabeth. That some knowledge of the New World existed beyond the circle of the Norse nations is clear enough. From the time when the voyages of the Northmen to America ceased dates a belief, general throughout Western Europe, in a large island lying in the North Atlantic, to the west of Ireland. There can be little doubt that this belief rested on traditions of the Norse

[1] Rafn, Ant. Am. xxxvi–xxxix.

[2] Humboldt, vol. ii. p. 133.

discovery of America. In the Pizigani map (1367) this great island is called the Island of Brazil. Under that name, as we shall find, it was sought by the sailors of Bristol many years before it was reached by Cabot. A commoner name for this island was the general denomination given to the lands beyond Greenland in the Norse language, NÝJA-LAND or New Land, which prevailed from the thirteenth century onwards[1]. According to French chroniclers[2], the lands discovered by the Norsemen continued to be known to the Norman and Breton sailors under the name of 'Terre Neuve.' Nothing is more probable: the sailors of English and French ports frequented the ports of Iceland and Norway: and the fishing-grounds of Newfoundland, once known to them by name, were not likely to remain long undiscovered, or to be soon forgotten.

Relation of Antonio Zeno.

Towards the close of the fourteenth century, and therefore before the extinction of the Greenland settlements, a Venetian navigator named Antonio Zeno sojourned in the Faeroe Islands, in the employ of Henry Sinclair, Earl of Orkney and Lord of Roslyn, a great nobleman who acknowledged as overlords the kings of Scotland and of Norway. At that time, if we may credit the manuscript published by his descendant, there was current in those parts a very fair knowledge of North America. A thousand miles west of Faeroe, said report, there lay a great island called ESTOTILAND[3], smaller but more fertile than Iceland, and having forests of vast extent. This island clearly was Newfoundland. The inhabitants, who lived in towns and villages, built and sailed small boats, but knew nothing of the compass. They traded with Greenland: they sowed corn and made beer: among them were found books in the Latin language, which none of them, however, was able to read. Southward of Estotiland lay a country called DROGIO; a country very large, and, as it were, a New World, inhabited by warlike tribes of cannibals, who went

[1] Rafn, Ant. Am. pp. 262–263, 451–452, 459.

[2] Kunstmann, p. 42; L'Escarbot, Histoire de la Nouvelle France, p. 247; Gomara, book ii. ch. 2.

[3] 'Estotiland' has been ingeniously interpreted 'East-outland,' with reference to its situation.

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naked, and lived by hunting. Still further south lay a country enjoying a milder climate. Here there were cities: in the cities were temples in which men were sacrificed to idols, and afterwards eaten. In these parts, finally, there was abundance of gold and silver. This new land Sinclair resolved to explore: and Zeno accompanied him on a voyage in quest of it. But the mariner on whose guidance they depended suddenly died: the fleet met with foul weather, and was driven southwards to the coast of Kerry in Ireland. Sinclair sailed thence to Greenland, and in due time returned home without attaining his object. Some years later, Zeno returned to Venice. He committed his adventures to writing: but the document long remained neglected, and it was only in 1558, when Europe was at length turning its attention to the New World, that his voyages were made known to the world by a descendant[1]. Of the general authenticity of the Zeno relation there can be little doubt: but the singular exactitude of his account of Mexico, taken together with the general interest inspired in the subject, at the time of its publication, by the conquest of Cortes, and the wide circulation of books relating to it, throws justifiable suspicion on its details[2].

Different ground occupied by the first and second processes.

This second process had thus in the time of Columbus long passed the point of discovery. Physical conditions account for its complete separation from the first process. The tropical situation of the Indies would naturally determine the direction of any explorations intended to test the Hispano-Indian theory. The physical means of testing that theory ceased beyond the northern limit of the Trade-winds. It is thus easy to understand the isolation of the Scandinavian discovery, and the circumstance that when the Hispano-Indian theory actually came to be tested, the

[1] The relation of the voyages of the Zeni, sometimes regarded as a forgery designed to rob Columbus of his reputation, and always a literary puzzle of great complexity, was unravelled by Reinhold Forster, Voyages and Discoveries in the North, book ii. § 13.

[2] On the alleged voyage of the Polish pilot John Szkolny to the New World in 1476, see Lelewel, Géographie du Moyen Age, vol. iv, and Humboldt, vol. ii. p. 152. Szkolny's voyage is witnessed by Gomara, who did not however suspect that it preceded that of Columbus. Hist. Gen. book ii. c. 2.

Scandinavian discovery had no bearing whatever upon the process. Columbus himself did nothing for the discovery of North America. He is properly the discoverer of the West Indies and Equinoctial America. So little had his discovery, even when greatly extended by his contemporaries and successors, to do with North America, that it was long uncertain whether the Columbian Indies were not an *oikoumenê* by themselves, and separated by a belt of ocean in the manner imagined by Macrobius, from the imperfectly known lands of North America. The name of America was long applied only to the southern continent: and it was here that the attention of the Spaniards and Portuguese was concentrated. But the process to which the Scandinavian discovery belongs quickly reappears when the world has heard of the expedition of Columbus. The discovery of North America by the Northmen, and its rediscovery in the time of Columbus by the English, belong to the same historical process. The filiation of Cabot with the Norse discoveries may be clearly proved in more ways than one. In the first place, he followed their route. He went 'by way of Iceland,' with which country he was well acquainted. Secondly, he used the very name by which America was known to the Icelanders. In the thirteenth century, as we have seen, the American coast was known in Norway and Iceland as *Nýjaland*[1]; and as the 'Newe Isle' or 'Newe-founde lande' it re-appears in European history in the time of Henry VII.

The Maritime Revolution.

From this isolated discovery in the north I pass on to the general movement which prepared a similar discovery in the south. When Biarne Herjulfson first gazed on the shores of America, the art of navigation in the Mediterranean had made no advances for a thousand years. It had rather gone back. Lands discovered by the Phœnicians beyond the Pillars of Hercules had ceased to be known: nor was the Mediterranean navigated by vessels

[1] Rafn, Antiquit. Americ. pp. 262–263, 451–452, 459. Rafn, by an unnecessary juggle which Mr. Blackwell has sufficiently exposed in his additions to Mallet's Northern Antiquities, contends that America was even known as Nýja-fundu-land.

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comparable with those built in the time of the Antonines[1]. The rise of Genoa, Pisa, and Venice, in the eleventh and twelfth centuries, marks the beginnings of a movement which has been denominated the Maritime Revolution. Genoa rapidly outstripped the rest, and even rivalled the commercial importance of Constantinople. She became a far-reaching naval power, reviving the glories of Tyre and Carthage. Her colonial possessions reached from the extreme west to the extreme east of the Mediterranean, and fringed the shores of the Euxine. The whole carrying trade of the Mediterranean fell into the hands of Genoa and her sister republics. In the thirteenth century, the Genoese began to extend their explorations beyond the Straits of Gibraltar. The necessities of their commerce had led to a revolution in ship-building. The galleys of the Mediterranean no longer sufficed; and the naval constructors of Genoa invented the carrack, a vessel strongly built and capacious, of rounded model, with a deep draught of water. The Genoese carrack, with its high poop, a structure often three floors high, became the model of the ocean-going ships of Spain, Portugal, France, England, and Flanders. Europe now possessed, for the first time since the days of the Phœnicians, a type of vessel suitable for the navigation of the Atlantic. Upon that navigation the Genoese soon entered. During the thirteenth century, they explored the coasts of Africa as far as Cape Bojador, and discovered the Canaries and Madeiras[2]. Thus was recommenced the third of the processes which involved the discovery of America—the exploration of the islands of the eastern Atlantic.

Third historical process—Islands of the Atlantic.

This process, like the first, remounts to classical antiquity. The beginnings of exploration in the island groups of the Atlantic were made by the ancients. These groups are four in number. The Canaries, lying almost within sight of the coast of Africa, could not long escape

[1] See Lucian's description (Dialogue 'Navis') of the Egyptian *Isis*, 180 feet long, 45 feet broad, nearly as much in height from keel to deck, and capable of carrying the yearly food supply of all Attica.

[2] Canale, Storia della Repubblica Genovesa (1860), vol. iii. pp. 338–345.

observation. The Madeira group, some distance away in the ocean, would soon be discovered by ships plying to the Canaries: while the more southerly group of the Cape Verde islands, and that of the Azores, which lies in the very middle of the Atlantic, could only be reached when navigation had considerably advanced. The Fortunate Islands described by Homer and Hesiod were unquestionably the Canaries[1]. They were well known in name to the ancients, who reckoned the longitude eastward from them as the most westerly lands on the globe. The Madeira group was known to the Roman geographers by the name of the Purple Islands[2]. The acquaintance of the ancient world with these groups was certainly due to the Carthaginians[3]. Seamen who could double the Cape of Good Hope were not likely to leave the Atlantic islands unexplored: and though a veil was cast over their discoveries, for political reasons[4], there is every reason to suppose those discoveries to have been extensive. Carthaginian coins have been discovered in the Azores, half-way across the Atlantic[5].

Rediscovery of the Atlantic Islands.

In the last and greatest period of its history, the main strength of the Carthaginian empire lay in the Spanish peninsula; and its entire concentration here was rapidly proceeding. It was from the ports of Spain that the Carthaginians sailed to explore the Atlantic Ocean between Britain and the Canaries. Twice, therefore, in history has the Iberian peninsula been the natural centre of Atlantic discovery. During the sixteen centuries which elapsed between the two periods, the original discoveries had not been quite forgotten. The Fortunate Islands, though lost to knowledge, retained a place on the maps in the middle ages:

[1] D'Avezac, Iles d'Afrique (L'Univers), part ii, p. 13; Lelewel, Die Entdeckungen der Carthagen und Griechen auf dem Atlantischen Ocean, cap. 32.

[2] Peschel, Geschichte der Erdkunde, p. 24.

[3] D'Avezac, Iles d'Afrique (L'Univers), part. ii, p. 8. The celebrated Periplus of Hanno was limited to the coast and some unimportant isles near it.

[4] See the story of the land discovered and colonised beyond the Pillars of Hercules in Pseudo-Arist., Mirabiles Auscultationes, cap. 84, Bekker; cf. Diod. Sic. v. 19. The passages attracted much attention after the Discovery. Oviedo identified America with this island, which was probably one of the Canaries. The author of the 'Historie' thought it one of the Azores.

[5] Chateaubriand, Autobiography, p. 243.

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and when the adventurous Genoese navigators began to scour the ocean outside the Straits of Gibraltar their rediscovery became certain. But this rediscovery by Italian navigators had no immediate result. No advantage could accrue to Genoa by their permanent occupation; and it was natural for the discovery itself to relapse into obscurity. That the Genoese were here the pioneers of the French, Spaniards, and Portuguese, admits of no doubt. Led to explore the Atlantic, there can be little doubt, by the desire of ascertaining the extent of Africa, and the possibility of reaching the Indies by circumnavigating it, they seem very soon to have come to that conclusion which was obvious, and to have abandoned the Atlantic as a field of discovery. The genius of the countrymen of Columbus was eminently practical. The advantages of concentrating attention in the Levant, and the delays and difficulties of circumnavigating Africa from Genoa as a starting-point, left but one conclusion; and the Atlantic, with its mountainous isles, was left untouched for two generations longer.

The Western nations explore the Atlantic.

An interval which may be roughly estimated at somewhat less than a century separates the discoveries of the Genoese and the occupation of the Atlantic islands by adventurers from the Spanish Peninsula. The same physical law which in after times gave North America to the English threw the islands of the Atlantic into the hands of Peninsular colonists: and the neglect of North America by the Spaniards has its early parallel in the neglect of the Atlantic islands by the Genoese. The decay of Genoa and of the Mahomedan communities on the Mediterranean left the Spaniards and Portuguese early in the fourteenth century masters of the sea outside the Straits of Gibraltar. They were not slow to rediscover and occupy the islands which they found marked on the maps of their Genoese captains. The Canaries were first reached: by the subjects of what Peninsular prince, is uncertain. The Portuguese claimed to annex them: but in 1344 Lewis de la Cerda, an Infant of Castille, obtained from the Pope a grant of them as a principality, under the name of Fortunia[1]. The

[1] Kunstmann, Die Entdeckung Amerika's, p. 2. The grant so alarmed the

Madeira group was rediscovered seven years later. The appearance of these islands on maps of the world led to continual efforts to discover more. The French and Portuguese were even contesting the possession of them with the Spaniards, as two centuries afterwards other nations contested the possession of the islands in the Caribbean Sea. The discovery, on more than one, of the valuable dyeing wood called Brazil caused the introduction on the map of a large island called the Island of Brazil [1]. Antilia, a legendary isle of which some account will be shortly given, was alleged to have been seen: and a hundred years before Columbus it seemed as if Spanish sailors were already on the high road to America. But the progress of settlement in these islands was slow. During the fourteenth century the Canaries alone were really occupied: and this occupation was of slight significance. It was not until the fifteenth century that Portuguese enterprise, directed by the Infant Henry, began to produce a new face of things in the Atlantic isles, and to colonise Madeira and Porto Santo. The Azores were reached in 1432 by the Portuguese Gonçalo Cabral. Europe was now literally half-way to America.

The Portuguese on the African coast.

Though a close examination may dim the traditional fame of the Infant Henry of Portugal as the father of discovery, it yet leaves him a remarkable figure in history. But the virtuous virgin-prince, zealous alike, by a rare conjunction, for the faith and for the sciences, alternately watching the planets in the tower of Sagres, despatching his mailed vassals to slay and capture the Moors, equipping ships for the toilsome task of discovery, and rejoicing exceedingly when their safe return added a few more leagues to his chart of the African shore, simply pursued a commercial speculation with ardour and success. History always rests on an economic basis. None of its processes can long go on, unless the expenditure which it involves

English envoys at Rome, who supposed the British isles to be included in the Infant's charter, that they at once departed with the news for England. See Robert of Avesbury.

[1] See Humboldt, vol. ii. pp. 214–244.

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is compensated, and something more. The voyages of the Northmen to America ceased, because it was not worth while to continue them: but the Portuguese exploration of Africa reposed on the solid basis of the slave trade. The state of society on the western coast of Africa between Gibraltar and the Gambia is the connecting link between the slavery of the East and the slavery of the West. The half-savage Mahomedans who have roamed over it, under the denomination of Moors, ever since the great Arabian invasion, have always been slaveholders: and they enslaved the European and the Negro alike. With the Portuguese, their hereditary foes by race and religion, they waged continuous war: the Portuguese enslaved the Moor, and the Moor the Portuguese. Renegades were long encouraged on either side; and before Morocco fell under the Sherif dynasty in the beginning of the sixteenth century it contained large numbers of Portuguese colonists. The Negro of Guinauha, as the Moors called the land of black-men south of the Gambia, was the favourite human chattel in Morocco. Strong, tractable, and apparently intended by nature for the use of a more intellectual race, he was introduced thence into the Peninsula, where population was thin and labour scarce, and the Moorish captive had always found a ready buyer. The Negro was soon in demand; and it was to supply this demand that the Infant despatched his vessels to the coast of Africa.

The African coast as a school of navigation.

It has been already seen how the continued navigation of the Northern Atlantic, in all its parts, by the Northmen, enabled that hardy race to cross the gulf that separates the two worlds, and to visit and explore the coasts of America, while the process of exploration in the Southern Atlantic was yet in abeyance. What the voyages to Iceland and Greenland, and the ravaging of the coasts of Europe, were to the Northmen, that the voyages to the Canaries and Madeiras, and the ravaging of the coasts of Africa, were to the sailors of the Spanish peninsula. A century's experience of this deserted shore, with its countless hidden dangers, its baffling headlands and deceitful currents, desolated by a furious surf, gave the seamen of Portugal and Spain the

command of the ocean. To sailors who have encountered the tornadoes of the Bight of Benin, crossed the terrific rollers of Sierra Leone, which curl in five fathoms, and break furiously in three and even four, and beaten up to Cape Branco from the south against the trade-wind, no feat of seamanship can be difficult: and it was precisely in this school that Columbus was educated.

Italian influence on the process of exploration.

The expeditions of the Portuguese and Spaniards were invariably made under the direction of Italian captains. Genoa, Venice, and Pisa were the great schools of cosmographical science and of practical navigation: and the list of Italian navigators employed in Western Europe remounts to the earliest times, and includes Columbus, Cabot, and Verazzano. Genoa was the source on which Portugal had always relied for sea-captains. As early as 1317, Dionysius the Liberal contracted with his 'hereditary admiral' Emanuele Pessagno to supply him with a perpetual staff of twenty skilled Genoese to command his vessels: and in the time of Columbus this function continued in Pessagno's descendants[1]. Italian mathematicians instructed these captains in navigation; Italian ship-builders built and launched their vessels: and finally, the adventurers and undertakers of maritime expeditions had recourse to Italian bankers. Genoa was equally the source of all the maritime skill of Seville and Cadiz. Spanish writers formerly affected to deny this, which is now fully admitted by candid antiquaries. In fitting out a maritime expedition, says a recent author, everything was done by Genoese hands. The designers and builders of ships, the captains, and often the crews, were all citizens of the Ligurian republic[2].

[1] Canale, Storia del Commercio, dei Viaggi, &c., degl' Italiani, lib. iii. cap. 10, and the official extract *sub fin.* The contrary and erroneous impression, that the impulse to discovery is due to Portugal, that Columbus himself was entirely educated in the Portuguese seafaring school, and that Genoese and Venetian enterprise followed that of Portugal, has been widely popularised by Robertson. The great map of the Pizigani, made in 1367, of which a facsimile is given in Jomard's Monuments de Géographie, is conclusive evidence of the priority of the Italians.

[2] De Salas, Marina Española de la Edad Media (1865), vol. i. p. 169: 'Los principales destinos, los mejores empleos, y los oficios más caracterizados que

Book I. *Discovery.* Colonisation in the Atlantic.

Colonisation, in the true sense, was first begun in the Atlantic by the Portuguese. The first island colonised, or, in Peninsular phrase, 'populated,' was Porto Santo; and the colonisation of Madeira quickly followed. The founder of the Porto Santo colony was one Bartholomew Perestrello, a gentleman in the service of the Infant John, an elder brother of the Infant Henry. The colonial policy of the Portuguese was not exclusive. They admitted emigrants of other races: there was a settlement of Flemish emigrants in the Madeira group: and the island of Fayal in the Azores was so much in their hands that it acquired the name of New Flanders [1]. Under the direction of the Infant Henry, the great woods, from which Madeira took its name, were cut down: and the soil was made ready for the vine of Cyprus and the sugar-cane of Sicily. The feudal land-system of Europe was introduced: in return for the Pope's recognition of Portuguese rights, the Church was established and endowed. A similar process took place in the Azores and the Cape Verde islands. Alfonso the Fifth granted Santa Maria and Lana to the Infant Ferdinand. At every turn in the history of this Atlantic insular colonisation, we are struck by some analogy to the subsequent colonisation of America. As in the case of the West Indian islands, the native names of the Atlantic islands were replaced by new ones, among which were conspicuous those borrowed from the saints of the Christian calendar. Where the colonist was also the discoverer, it was usual for him to apply to the Crown, and obtain a grant of such island, islands, or continental coast as he should discover. Such discovery, as well as the actual entry and colonisation,

en tierra y á bordo se ejercian estaban provistos en naturales ú oriundos de aquella república. Genoveses eran los maestros de construccion, genoveses los fabricantes de ballestas, genoveses los viroteros, genoveses los remolares, genoveses los naocheros, genoveses algunas de los tripulaciones: todo era genovés, y de Génova, aunque naturalizado en el reino, era por último el almirante de la armada.' Antonio de Volle, a Genoese, was the discoverer of the Cape Verde islands. The Genoese were equally important in the early Spanish colonisation of America: and they were the first to import African slaves in considerable numbers to Española, to replace the labour of the perishing aborigines.

[1] Kunstmann, p. 22.

was to be at the adventurer's own costs and charges: but, one tenth of his profits was to be paid to the Crown. Often islands were discovered which lay some years uncolonised. They were then granted away to any prince or nobleman who chose to ask for them. Thus another grant by Alfonso, dated 1462, recites the discovery of two new unpeopled islands, and grants them to John Vogado and his heirs. Vogado was a nobleman of Alfonso's court: and we shall shortly find precisely the same process pursued on the soil of America. A general stir had thus been produced in the western world by the discovery and occupation of these new lands in the Western Ocean. The conception of *insulae de novo repertae*, as they were written down on maps, 'new-found lands,' was familiar to the navigator and the capitalist. In time the series of them would come to an end. Such a stagnation of Atlantic discovery would then operate as the match to the train. When the isles of the Atlantic had been explored, and the blank broad ocean alone remained, a new phase would appear. The ocean, if it could be really crossed, must have some limit; and what could that limit be, but India?

Slave trade on the African coast.

The regular slaving expeditions on the African coast date from later times than the beginnings of Atlantic island colonisation. It was about 1440 that the love of gain prompted the Infant Henry to send slaving expeditions to the Moorish coast between Cape Bojador and the Gambia; and two years later he procured from Pope Martin the Fifth a general grant of all the kingdoms and lordships from Cape Bojador to India inclusive. The grant was confirmed by the succeeding Popes: and from this time forth the exploration of Africa took a new character. The captured Moors told of the great land of Guinauha, farther to the south, where gold-dust and Negro slaves might be got in abundance: and the emissaries of the Infant had soon passed Cape Branco, and reached a land that swarmed with Negro savages. The cargoes of slaves which were brought back caused a rush for the Guinea coast. The Infant licensed any slaving expedition, reserving to himself a fifth of the produce: and an account of such an expedition made from

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the Portuguese town of Lagos with six caravels to the Garzas islands probably illustrates only too accurately the state of things which followed. The adventurers returned to Portugal with two hundred and sixteen slaves, forty-six of whom were assigned as the Infant's fifth, of which, says the Portuguese chronicler, he had great joy because of their salvation, who otherwise had been destined to perdition. These poor creatures were sold in open market, the father being perhaps carried to Lagos, the mother to Lisbon, and the children elsewhere. It is certain that the Portuguese engaged in a trade even more nefarious. They kidnapped negroes on the coast of Benin, and carried them to Elmina, where they sold their prey to other negroes for gold [1]. The infamous system on which the development of America in many places depended is thus clearly proved to have been in perfect existence long antecedent to the discovery of the New World, to which it found its way from the Old.

Ideas derived from Africa transferred in after times to America.

We have now formed a complete idea of the group of associations with which the process of maritime exploration stood connected in the latter half of the fifteenth century. Islands were discovered and colonised. The coasts of the continent were explored, and titular possession of them was obtained under a Papal grant. Then followed the quest of gold and slaves, pursued either by peaceful traffic or by cruel violence, as circumstances suggested. The impulse which grew from the hope of gain was diffused through all ranks of society, from the sovereign at home to the needy adventurer who risked his life amidst savages on a barbarous shore. Such was the narrow and sordid circle of ideas in which Columbus had been trained, and which he was the means of transferring in its entirety, as will presently be shown, to the shores which lay across the Atlantic. Neither in his time, nor long afterwards, was there any glimpse of a brighter dawn. His exploit was to have gained for the Spanish Crown that which the Portuguese Crown possessed in the African coast, a vast region abounding in gold, and in the bodies and souls of savage men. To seize and sell these miserable creatures as slaves was an act of mercy and

[1] Las Casas, Hist. de las Indias, Book i. cap. 24–26.

religion, for it relieved them from the doom of eternal damnation. The design of Columbus, as will be seen, was originally conceived in the interests of the Portuguese Crown. The Portuguese were already in nominal possession, under the Papal title, of the coast of Africa as far as India. Columbus proposed to reach India first, by a short voyage across the Atlantic; and thus the process of actual maritime exploration leads us back to the Hispano-Indian hypothesis, with the discussion of which the present Book commenced.

First and third historical processes coalesce.

The revival of the old Hispano-Indian idea in the time of Columbus was due to the recent astonishing progress made by the Portuguese in coasting the shores of Africa. So long as it was supposed, in accordance with the cosmography of Cicero, that Africa terminated north of the equator, the westward voyage to India had no obvious practical advantage. The Genoese hydrographer Francesco Pizzigani had as early as 1367 laid down the African coast as far as Cape Bojador. In the next century the process was continued by the Portuguese. The gradual discovery of the west coast of Africa, stretching southward in all its vast length, proved the advantages of a short and practicable westward route, if such existed: and these advantages were being carefully weighed by the learned advisers of the Portuguese Crown while the Discoverer was yet a lad. But the substantial progress made in the circumnavigation of Africa overbalanced the attractions of the Hispano-Indian theory. Though this progress was but slow, the Portuguese had good reason to suppose its ultimate success to be certain: and the Columbian idea was left for others to realise.

Discovery of the Trade-winds.

One more element was necessary to complete this compound of causes, and to precipitate the European adventurer on the shore of the western continent. There lacked some safe and speedy means of crossing the broad belt of ocean which had been ascertained to exist westward of the Atlantic islands. Such a means had been provided by nature in the shape of the Trade-winds. In the tropical zone, the effect of the sun's heat and the earth's revolution is to generate easterly winds, and these winds blow with

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little intermission all the year round. These winds, in after times, provided a regular highway for European commerce; and hence their name of the Trade-winds. These winds, as we have seen, were not indispensable to the discovery of the New World, though they were indispensable to the development of its substantial connexion with the Old World. A partial knowledge of them must have existed in very remote antiquity. When at their greatest extent, they reach the Spanish Peninsula. North of the equator, they blow from the north-east: and it was in fact this prevalent north-easterly wind which successively tempted the Phœnicians, the Moors, the Genoese, and the Portuguese to explore the coast of Africa. The constant nature of this wind must have been fully understood by seamen who frequented the Canaries and the Azores: and continuous exploration revealed the fact that while on the coast the Trade-wind gives place to variable winds when the Gambia River is passed, it still blows without intermission a few leagues to seaward. In the time of Columbus, the Portuguese explorers had learned to take advantage of this fact, avoiding the variable winds and disastrous tornadoes of the Gulf of Guinea, and reaching the southern latitudes of Africa by a circuitous course, which was within a few degrees of touching the coast of Brazil. That the Trade-wind thus prevailed in the equatorial Atlantic was a fact with which many others than Columbus were familiar: but it is certain that he was the first to seize its full significance. The stoppage of Atlantic discovery, the increased importance of India, the progress made by the Portuguese in the circumnavigation of Africa, were all transformed in the light of this great physical fact. It enabled the Atlantic adventurer to strike out a new path. Hitherto, exploration had been tentative. It had proceeded from island to island, and from group to group. Ordinary men expected it still to proceed in the same way; and in this way contemporary enterprise had been at once stimulated and misled.

Setting aside, for the moment, the Columbian theory, let us next enquire what new discoveries the adventurer had

reason to believe yet remained to be made in the recesses of the Atlantic. The process of island discovery had now been vigorously going on in that ocean for a century and a half. Though the immediate neighbourhood of the old world was exhausted, and the search must therefore assume a broader scope, there was no reason to believe the cycle of discovery to be closed. The balance of likelihood lay the other way. There had existed in Europe from the earliest times a group of legends relating to lands believed to exist in that ocean, none of which the process of discovery had as yet revealed. First among these comes that mysterious land of Atlantis which bore the name of the ocean itself. The legend of Atlantis[1], which learned pedantry has variously explained as the tradition of an ordinary migration[2], as an overgrowth, belonging to the sixth century B.C., upon the legendary history of some obscure island in the Mediterranean[3], as a political myth invented for party purposes by Solon[4], as a corrupt version of the story of the Cushite Nimrod[5], and as a pure fiction invented by some unknown person for no purpose at all[6], has been placed on a new basis by geological and botanical science. It seems certain that Europe and America once formed a single continent, that breaches were gradually wrought in its continuity which left a vast island or peninsula stretching from Iceland to the Azores, and that this vast island or peninsula gradually disappeared[7]. Atlantis, however, was not among those lands the search of which was a practical object. So far as the story was credited at all, Atlantis was believed to have

[1] Plato, Timaeus and Critias; Diodorus Siculus, iii. 207; Ammianus Marcellinus, i. 17. Atlantis (sc. *νῆσος*) signifies 'island of Atlas,' as Atlantic (*ἡ Ἀτλαντὶς θαλάσσῃ*, Herod. Clio, 202) signifies 'sea of Atlas.' The name of the sea is derived from the snow-topped range which is seen from it, and is applied secondarily to the island.

[2] Bailly, Lettres sur L'Atlantide de Platon.

[3] Humboldt, i. pp. 115, 167.

[4] Letronne, Essai sur les idées cosmographiques qui se rattachent au nom d'Atlas.

[5] Bunsen, Aegyptens Stelle in der Weltgeschichte, iv. 33, 314.

[6] Ib.

[7] Unger, Die versunkene Insel Atlantis, 20 (in the Gesammelte Naturwissenschaftliche Vorträge, Wien, 1870).

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disappeared. After the discovery of America, the New World was sometimes identified with this fabled land, and the legend was modified to suit this theory. Such was the view of Bacon, who consecrated the name anew in the noble romance which tells of a second or New Atlantis in the Pacific. Instead of being swallowed by an earthquake, as in the Greek relation, he conjectured that Atlantis had merely been desolated by a deluge, and was now repeopled by that new and barbarous race of men who were called Americans[1].

The Kronian Continent.

Before passing on to the mythical islands which were in the time of Columbus a positive object of search, it may be mentioned that the Roman writers had preserved a curious tradition relating to a great land separated from Europe by the North Atlantic ocean, and known as the 'Ogygian' or 'Kronian Continent.' Like the Lôkalôka of Indian mythology[2], this great land was situated towards the north-west. In a second form of the legend[3], this land is called Meropis: Plutarch, connecting it with the myth of Kronos, calls it the Kronian Continent[4]. It was a great main-land, stretching towards the north, lying many days' sail west of Britain, with three large islands serving as stepping-stones to the voyager. This great main-land was surrounded by the ocean; but the approach was rendered difficult by the alluvia brought down by its great rivers. Its inhabitants regarded their own land as the true terrestrial continent, and the *oikoumenê* composed of Europe, Asia, and Libya as merely an isle surrounded by the ocean. The significance which properly belongs to this striking legend is not easily ascertained. Viewing the legend apart from its excrescences, it is not easy to resist the suggestion that some dim knowledge of the great western world may have reached the early voyagers to Thule, and that they may

[1] New Atlantis: Essay on the Vicissitude of Things.

[2] Humboldt, vol. i. p. 114.

[3] Theopompus, apud Aelian, Var. Hist. iii. 18.

[4] Plut. de Facie in orbe Lunae, p. 941; Humboldt, vol. i. pp. 192–206. The Kronian Continent was first identified with America by Ortelius, in 1570. The name was originally applied to the supposed Frozen Sea of the North, and has been fancifully supposed to contain a Celtic element (môr-croinn).

have interpreted the existing Kronian myth by reference to this report. But the probability is that the Ogygian or Kronian continent is neither more nor less than the Scandinavian peninsula, the connexion of which with the continent was long unsuspected. The legend was unknown to Columbus, and had no bearing on the discovery of the New World.

Mythical Voyages.

The lands which it was supposed might yet await the discoverer in the Atlantic were not on this vast continental scale. They were rather islands of moderate size, such as had already been revealed in great numbers: and some such islands were associated in the Middle Ages with particular legends. Foremost among these comes the legend of the Almagrurim Arabs[1]. Before the year 1147, says the story, eight Arabs set out from the port of Lisbon to discover the Isle of Sheep, on the other side of the Sea of Darkness, swearing not to return until they had crossed the said sea. After a voyage of thirty-five days to the south-west, they arrived at the Isle of Sheep: but finding the flesh of the sheep bitter and inedible, they sailed yet further twelve days' voyage southwards, and reached an island inhabited by tall red-skinned men with long hair. The king of the said isle had in his service an interpreter who spoke Arabic. This circumstance, coupled with the return of the adventurers by way of Morocco, has been thought to indicate that the island visited by them lay off the coast of Africa. According to such a view, the Almagrurim may have been the rediscoverers of the Canaries. However this may be, the legend served to keep up that belief in mysteries concealed in the depths of the dark Atlantic, and yet to be penetrated, which was an unquestionable factor in nautical enterprise during the fourteenth and the fifteenth centuries.

Voyage of Madoc.

Of greater interest is the legend of Madoc ap Owen Gwynedd, resuscitated by the antiquaries of the sixteenth century[2]. Weary of those civil broils which were the main

[1] Muñoz, Historia, book ii. ch. 11; Humboldt, vol. ii. pp. 137, 142.

[2] Hakluyt, vol. iii. p. 1; Powell, History of Wales, pp. 228, 229; Humboldt, vol. ii. p. 142.

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occupation of the age, this chieftain, about the year 1170, is said to have set out for the west, leaving the Irish coast to the north. He reached strange lands, and in due time he returned: and so tempting was his account of them, that a large number of colonists set out with him, quitting wild and mountainous Wales, to seek this fertile new-found country over the sea. Probably the island reached by Madoc was not forgotten when the contemporaries of Cabot spoke of the 'new isle' and 'new-found land' in the west. Bristol, whence the seekers of the 'new isle' sailed, was closely connected with Wales: Henry the Seventh, as the son of a Welshman, must have heard the story of the voyages of Madoc: and Guttyn Owen, a poetical historiographer who relates the whole story of Madoc, was employed by Henry to make out his paternal pedigree. Though antiquaries have placed the story of Madoc under the head of mythical geography, it possibly belongs to genuine history, and is connected with the contemporary cycle of Norse voyages[1].

St. Brandan.

Some of the islands of legendary story were distinctly laid down on the maps: and the chief among them were the Isle of St. Brandan, and the isle Antilia, or Isle of the Seven Towns. St. Brandan, an Irish missionary, accompanied by other holy men, among whom was the celebrated French saint Maclou or Malo, about the sixth century discovered an Isle of the Blessed to the north-west of Europe[2]. No story was more popular in the end of the fifteenth century. The critic who does not absolutely reject it, as the Bollandists have done, may take his choice of original versions of it in eight different languages: and St. Brandan occupies ten dense pages in William Caxton's version of the Golden Legend[3]. Stimulated by the reports

[1] In support of the story of Madoc it may be said that communication existed between Ireland and Iceland, and that the latter at the date of the legend had frequent communication with America.

[2] D'Avezac, Iles fantastiques de l'Océan occidental, p. 4; Humboldt, vol. ii. p. 163; Peschel, Abh. über Erd- und Völker-kunde, p. 20, where the subject is well summarised. The Saint was popular with sailors: there was a chapel of St. Brandan at Bristol.

[3] Finished at Westminster, May 20, 1493. Fol. 382–387.

of other adventurers in the great sea ocean, St. Brandan resolved by God's help to examine the great sea for himself. 'Anon,' says the legend, 'he began to purvey for a good ship and strong, and victualled it for seven year.' The whole story of the Saint's adventures bears neither repetition nor criticism: but in the midst of much crude fiction we find occasional touches which have evidently been derived from the reports of genuine voyagers. In the course of their seven years' adventures, they visit the Isle of Sheep, a full fair island full of green pasture: another fair island, full of flowers, herbs, and trees, where they thank God of his good grace: a little island, wherein were many vines full of grapes: they meet with great tempests, in which they are greatly troubled long time, and sore forlaboured; at other times, calm airs, and water so clear that they might see all the fishes that were about them, whereof they are full sore aghast: again they behold an hill all of fire, and a foul smoke and stink coming from thence: and finally, reach an attemperate land, ne too hot ne too cold, the fairest country that any man might see, in which the trees are charged with ripe fruit and flowers. Here they walk forty days, but find no end thereof, and at length lade their ships with its fruits and return home. Such conceptions were widely spread through the medium of the extremely popular work which contained them. The great island of St. Brandan was originally placed by geographers in the neighbourhood of Ireland. In later times we find it transferred to a more southerly latitude. Pizzigani's map of 1367 places it in the Madeira group. The inhabitants of Ferro, the most westerly of the Canaries, believed themselves to descry year after year, in fine weather, land to the west. Cosmographers identified this land with the legendary island of St. Brandan. Martin Behaim, in 1492, placed it near the Equator. The island long kept its place on maps: lying travellers were not wanting, who declared that they had landed upon it: and down to the year 1759 expeditions were made in search of it[1].

[1] D'Avezac, Iles fantastiques, p. 15.

Book I. *Discovery.* Antilia.

Familiar as is the name of the 'Antilles,' few are aware of the antiquity of the word; while its precise significance sets etymology at defiance. Common consent identified the Antilia of legend with the Isle of the Seven Cities. In the year 734, says the story, the Arabs having conquered most of the Spanish peninsula, a number of Christian emigrants, under the direction of seven holy bishops, among them the Archbishop of Oporto, sailed westwards with all that they had, and reached an island where they founded seven towns. Arab geographers speak of an Atlantic island called in Arabic El-tennyn, or Al-tin (Isle of Serpents), a name which may possibly have become by corruption Antilia[1]. By chance in 1414 a Spanish vessel touched at the island[2]. The seven bishops were believed in the sixteenth century to be still represented by their successors, and to preside over a numerous and wealthy people[3]. Most geographers of the fifteenth century believed in the existence of Antilia. It was represented as lying west of the group of the Azores: and was drawn upon maps with an invariable sinuous outline[4]. As soon as it became known in Europe that Columbus had discovered a large island, Española was at once identified with Antilia[5], in spite of the conviction of Columbus that it was the veritable Ophir of the Scriptures; and the name, undoubtedly commended to general use, like the names Africa, America, and Australia, by its vocal harmony, has ever since been applied generally to the West Indian islands.

Island of Brazil.

The maps of the middle ages commonly show in one or more places an island called 'Island of Brazil.' This was

[1] Humboldt, vol. ii. pp. 173–214.

[2] Inscription on Behaim's globe, quoted in D'Avezac, Iles fantastiques, p. 17.

[3] Pedro de Medina, quoted by D'Avezac, p. 25: 'Hic populus christianissime vivit, omnibus divitiis saeculi hujus plenus.'

[4] See for instance the Venetian Hydrographic Atlas of the fifteenth century in the British Museum. It is curious that the name of Antilia, though mentioned in Toscanelli's letter, is not noticed by Columbus. Humboldt, vol. i. p. 250.

[5] Peter Martyr, dec. i. cap. 1; Second Voyage of Americo Vespucci; Peschel, Zeit. d. Entdeckungen, book i. c. v. Las Casas (vol. ii. p. 395) says that Española was first called Antilia by the Portuguese.

the name of an oriental wood, largely used in Europe for the purpose of dyeing red[1], and supposed to be yielded in large quantities by some of the newly-discovered islands in the Atlantic. In the time of Columbus, the name had come to be applied in England to the undiscovered island which lay to the west of Ireland; and the island of Brazil was thus apparently confused with the island of St. Brandan. Voyages were made from Bristol for the express purpose of seeking it. 'On the 15th of July, 1480,' says a writer of undoubted authority, 'the ship of John Jay the younger, of eight hundred tons, and another, began their voyage from King's Road to the Island of Brasil, to the west of Ireland, ploughing their way through the sea. And Thlyde was the pilot of the ships, the most scientific mariner of all England: and news came to Bristol on Monday, September the 18th (1481), that the said ships sailed about the sea during nine months, and did not find the island: but being driven by tempests, they returned to a port on the coast of Ireland, for the repose of themselves and the mariners[2].' We learn from other sources that such voyages were made from Bristol every year. As a constant communication was kept up between Bristol and Iceland, it seems reasonable to conclude that the Brazil island of which Jay was in search was no other than the Wineland of the Northmen, and that the discovery on which he was bent was no other than that which was realised a few years afterwards by his fellow-townsman Cabot. Columbus, who frequented the port of Bristol and had sailed far beyond Iceland, was undoubtedly acquainted with these fruitless voyages. Similar voyages, equally fruitless, were being made at the same time under the direction of the king of Portugal. Columbus learned the lesson which they taught: for his own success, as will be seen, was due to the total abandonment of the visionary object with which these voyages were undertaken.

[1] Especially as a cosmetic. Chaucer, Nonne's Preeste's Tale:

'Him needeth not his colour for to dyen
With Brasil, ne with grain of Portingale.'

[2] William of Wyrcestre, ap. Lucas, Saecularia, p. 112.

Book I. *Discovery.* Drift of the Gulf Stream.

In connexion with these attempts to push the limits of discovery yet further, the attention of Portuguese seamen had long been drawn to the sea-drift which was borne across the Atlantic and deposited on their shores. We have seen how the great current of the Gulf Stream and the prevailing westerly winds formed a grave practical obstacle to the pursuit of direct westward exploration in the latitude of Europe. The sea-drift which arrived with them stimulated curiosity all the more. The attention of Columbus was fixed on this subject from the time of his arrival in Portugal: and he carefully collected and put on record such facts connected with it as were within his personal knowledge. One of the king's pilots, named Martin Vincent, had found, many leagues to the west of Cape St. Vincent, a piece of wood carved by hand, but not, as he thought, with an iron tool. His own brother-in-law Correa, also a pilot in the royal service, had found another resembling it. These mysterious implements, which were no doubt Indian paddles, were drifting before a westerly wind. Correa had also picked up enormous reeds or bamboos, detached, perhaps, from the cane-brakes of the Mississippi. Columbus was present when this was related to the king, and heard the king order them to be brought for his inspection. Ptolemy had spoken of the huge bamboos of India: and for Columbus these reeds were conclusive evidence that the eastern shore of Asia was not far distant. Such evidences, he says, were even more plentiful in the Azores. Pine-logs were drifted on the coasts of Graciosa and Fayal, where no pines grow: on Las Flores, another of the Azores, the bodies of two men with broad faces, very unlike Europeans in appearance, had floated ashore: at Capo de la Verga skin-covered canoes had been cast on the beach, the navigators of which, he concluded, had perished at sea[1]. These tokens of another world in the West had not been wafted over the ocean, as Columbus supposed, by the mere force of the westerly winds, but had been borne on the great drift of the Gulf Stream. To every part of the shore of the Old World, from Norway to

[1] Las Casas, H. de las Indias, lib. i, cap. 13.

Morocco, that perennial current is ever drifting some relic of the opposite continent. Logs of pine and mahogany, branches of the tropical plants, masses of the sargasso or gulf-weed, Indian canoes and canoe paddles, still from time to time strew the various European shores[1]. The lesson of these drifts was obvious. There undoubtedly existed some great land in the West, whence these relics had come. Further, they demonstrated the possibility of reaching it. Where the pine-log could float, the seaman's bark could float also.

Discovery of Antilia anticipated.

The discovery of the last island of any importance in these Atlantic groups took place in 1442. The incidents of a whole century had by that time fixed in the European mind a belief in an endless series of Atlantic islands, open to discovery. That belief was now overturned. It is easy to conceive the effect which a thirty years' cessation of discovery would produce. Explorers, who were dissatisfied with such a cessation, would contemplate the organisation of greater and better equipped expeditions. Geographers would scan the belt of blank ocean beyond and speculate on its western limit. A few sailors would still scour the sea in search of those islands of legend which yet awaited the discoverer—St. Brandan, Brazil, and Antilia. These were laid down on the map: they were still to be found: and they offered a rich prize to discoverers. Antilia, which according to report had already been visited by Spanish ships, was the main object of discovery. Ferdinand Dolinos, owner of Terceira in the Azores, had so much confidence in its existence that in 1486 he procured a grant of it, to take effect on its discovery by himself. He described it as a great isle, or isles, or continent[2], which he was to discover, or cause to be discovered, at his own

[1] Drift mahogany is found on the shores of Portugal. The drift pines reach Norway, Iceland, and the Faroes in great abundance: in the latter islands the supply is relied on for fuel. The mimosa scandens and other species of the same genus are often found on the shore of Norway. The sargasso from Florida drifts up the English Channel, and is found as far south as the Bight of Benin.

[2] Kunstmann, Entdeckung Amerika's, p. 38: 'Huma grande ylha, ou ylhas, ou terra firme per costa.'

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costs, and to enjoy all the profits of such discovery, saving a tenth to the Portuguese king. Two years was the limit assigned for the operation of the grant: and we know that those two years produced nothing which caused it to take effect. The Isle of the Seven Cities still awaited the adventurer. Men of science, relying on a report which has been mentioned, looked upon it as already discovered. An Italian cosmographer, who had firmly convinced himself of the practicability of a westward voyage to India, proposed Antilia as a stepping-stone in that voyage.

Paolo Toscanelli.

Whether the plan of actually seeking the East by way of the West was first revived in Portugal or in Italy cannot be exactly determined. The first known fact connected with its revival is a discussion, which apparently occurred at Florence, between Paolo del Pozzo Toscanelli, the celebrated astronomer of that city, and a monk of Lisbon called Fernam Martins. Toscanelli declared to Martins his opinion that by sailing due west from Portugal the land of spices would in time be reached. Martins communicated this opinion to Alfonso the Fifth. Alfonso was struck with the plan. He commissioned Martins to communicate again with the Florentine, and to procure from him some practical details as to the suggested voyage. Martins wrote to this effect to Toscanelli: and the astronomer's answer, a copy of which, written by the hand of Columbus himself, has been recently discovered at Seville, deserves to be inserted in full. The geographical information contained in this letter, as will be seen by the foot-notes, was entirely borrowed from Marco Polo's Handbook to the East, then widely circulating in manuscript.

LETTER OF TOSCANELLI.

'To Ferdinand Martins, Canon, of Lisbon, Paul, Professor of the Sciences, sends greeting.

'I rejoice to hear from you of your favour and intimacy with that most noble and magnificent prince your King.

'Whereas I have before this conversed with you concerning a route to the Land of Spices, by sea, shorter than the present route by way of Guinea, and the King now

seeks of me some declaration with reference thereto; or rather, some ocular demonstration, so that even the moderately learned may see and comprehend the said route:

'Now though I know that this can be shown by means of the sphere, as also may the whole earth, I have determined, for easier understanding and working out thereof, to show that route and declare my opinion by means of an ordinary sailing chart.

'I therefore send his Majesty a chart drawn with my own hand, on which are shown your coasts and islands, from which the voyage continually westwards should be commenced, and the places where it should terminate, and how much the declination ought to be from the pole or from the equator, and how great a distance in miles ought to be traversed in order to reach these places, most fertile in all sorts of spices and gems.

'And wonder not if I describe as "Western" those parts where the spices are, and which are commonly called "Eastern:" for those parts may be reached by sea sailing straight to the west *beneath* the globe, just as they may be reached overland by going straight to the east *above* the globe.

'The straight lines marked lengthwise on the chart show the distances from east to west: the cross lines show the spaces from south to north.

'I have marked on the chart, for the better understanding of the sailors, divers places to which they may betake themselves, if through contrary winds or any accident they miss their course, partly also in order that they may show the inhabitants that they have some knowledge of that country, which ought to be very pleasing unto them. None dwell in the said isles except traders. It is said that there be there so many that sail thither with merchandise that the like thereof is not in the rest of the earth. One very celebrated port called ZAITON is said to be visited by above 100 pepper ships, besides other ships carrying other spices[1].

[1] Marco Polo, ap. Ramusio, vol. ii. fol. 49: 'Passate cinque giornate si truova la città di Zaitun nobile e bella, la qual ha un porto sopra il Mare Oceano molto famoso per il capitare che fanno ivi tante navi con tante mercantie, le qual si spargono per tutta la provincia di Mangi: e viviene tanta quantità di pevere, che quella, che viene condotta di Alessandria alle parti di Ponente è una minima parte, e quasi una per cento a comparatione di questa, e saria quasi impossibile di credere il concorso grande di mercanti e mercantie a questa città, per esser questo un di maggior, e piu commodi porti, che si truovino al mondo.'

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'This country is very populous and very rich, with a multitude of provinces and kingdoms, and cities without number, under one prince who is called THE GREAT KHAN[1], which name signifies in Latin "Rex Regum," whose seat and residence is for the most part in the province of KATAY[2]. His ancestors did desire the alliance of Christians: 200 years ago they sent to the Pope and asked for men learned in the faith that they might be enlightened. But those who were sent were hindered on their way and came back. Also in the time of Pope Eugenius there came one unto Eugenius who assured him of their great goodwill towards Christians: and I had with him a long discourse concerning many things, to wit concerning the greatness of the royal buildings, and the greatness of the rivers in breadth and their wondrous length, and the multitude of the cities on the banks of the rivers, so great that on one river there be built about 200 cities, and marble bridges of great breadth and length decked on both sides with columns.

'This country is worthy of being sought not only by the Latins because vast gains may be gotten thereout, of gold, silver, gems of all sorts, and spices which are never brought hither to us, but by learned men and philosophers and skilled astrologers, and to see by what methods and arts so powerful and magnificent a province is governed and its wars are carried on.

'This for some small satisfaction to his Majesty's request as far as the short time permits and my occupations have allowed, and ready at any time more fully to satisfy his Majesty as much as he will. Given at Florence the 25th day of June 1474.

'From the city of Lisbon due west 26 spaces are marked on the chart, each containing 250 miles, to the very noble and great city QUINSAY[3], which is 100 miles in circuit and

[1] Marco Polo, ap. Ramusio, vol. ii. fol. 18 and 19: 'Hora nel libro presente vogliamo cominciar' a trattar di tutti i grandi e mirabili fatti del gran Can, che al presente regna detto Cublai Can, che vuol dir' in nostra lingua Signor de' Signori. Et ben è vero il suo nome,' &c.

[2] Cathay is Marco Polo's name for China north of the Hoangho: Mangi, mentioned further on, is the name of the country south of that river.

[3] The description of Quinsay is the culminating point of the traveller's narrative; Ramusio, vol. ii. fol. 45: 'Dopo tre giornate, si truova la nobile e magnifica città di Quinsai, che per l'eccellenza, nobiltà, e bellezza è stata chiamata con questo nome, che vuol dire città del cielo, perche al mondo non vi è una simile, ne dove si truovino tanti piaceri, e che l'huomo si reputi essere in Paradiso. . . . Questa città per commune opinione ha di circuito cento miglia.'

hath 10 bridges[1], the name signifying CITA DEL CIELO, Civitas Caeli. Many marvellous things are told thereof—of the multitude of its craftsmen and of its revenues[2]. This space is about one third part of the whole sphere. Which city is in the province of MANGI, and near to the province of KATAY, wherein is the residence of the King. And from the isle of Antilia, known to you, to the most noble isle of CIPPANGU are ten spaces. Now this isle is most rich in gold, pearls and gems, and they cover their temples and palaces with solid gold[3]. So that there is no great space of sea to be traversed by unknown routes. Many things perchance ought to be declared more at length, but a diligent observer will hereby be able to make out the rest for himself. Farewell[4].'

He accompanied his letter by a map, which exhibited the old world as occupying two-thirds of the earth's circumference, and the sea to be traversed westwards as occupying one-third. The map showed the island of Zipangu (Japan) at a distance of fifty degrees east of Asia, and the island of Antilia fifty degrees east of Zipangu, or thirty degrees west of Lisbon, or about the latitude really occupied by Hayti.

Toscanelli and Columbus.

In the plan of Toscanelli we find for the first time the first and third historical processes combined, and the mythical geography of the Atlantic employed in aid of the Hispano-Indian idea. Antilia was to be the stepping-stone to the Asiatic shore. The plan was plausible enough: but, on the showing of Toscanelli himself, the first thing to be done

[1] Toscanelli here seems to have disbelieved his authority. 'E fama,' says Marco Polo, 'che vi siano *dodici mila* ponti, fra grandi e piccioli.'

[2] Marco Polo, ap. Ramusio, vol. ii. fol. 48: 'Fatt' il conto in presenza del detto Marco, fu trovato che l'entrata di questo Signore non computando l'entrata del sale, ascende ogni anno alla somma di 210 tomani .... che saria da redici millioni d'oro e ottocento mila.'

[3] Ib. fol. 50: 'V'ha un gran palagio tutto coperto di piastre d'oro, secondo que noi copriamo le case, ò vero chiese, di piombo, e tutti i sopra cieli della sale, e di molte camere sono di tavolette di puro oro molte grosse, e cosi le fenestre sono ornate d'oro. Questo palagio é cosi ricco, che niuno potrebbe giammai esplicare la valuta di quello. Sono anchora in questa isola perle infinite.... Sono etiandio molte pietre preciose.'

[4] The letter was first published in Italian in the Historie del Sig. D. Fern. Colombo, cap. viii. It is here translated from the supplementary volume of the Bibliotheca Americana Vetustissima of Mr. Harrisse, who discovered the copy in Latin written by Columbus himself.

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was to discover Antilia. Between the letter of Toscanelli and the expedition of Columbus, this object was constantly pursued. As we have already seen, during this interval one discoverer at least obtained a grant of this imaginary island. It may be too much to assume that the projects of Dolinos embraced the whole of the Toscanellian plan: but it is fair to suppose that he was not ignorant of the important place occupied by Antilia in the latest cosmography, and knew that if he discovered Antilia he would have discovered the stepping-stone to Asia. This stepping-stone, as we know, did not exist: and the plan indicated by Toscanelli might have been hopelessly sought for many a year, if it had not taken a new shape in a more comprehensive and original mind. We shall see hereafter that the very same plan was eagerly pursued elsewhere. Every year ships went forth from the port of Bristol in search of the great Atlantic island which lay half way to the Indies. The first merit of the discoverer of America consists in his abandonment of the illusory Antilia, and his concentration on the Indies themselves. While the plan of Toscanelli was being eagerly pursued both by English and Portuguese, in its original shape, it came naturally enough to the knowledge of a young Genoese navigator named Christopher Columbus, then resident in Lisbon in the Portuguese service. The idea sank deeply into his mind. He procured and transcribed a copy of the letter[1]: nor did he rest until the idea of Toscanelli had been carried out. On this young Genoese the world has long agreed to bestow the title of Discoverer of America. Though we have seen that Columbus was far from being the first European who set foot in America, or who brought distinct tidings of America to Europe, on a fair view of the whole question the title must be allowed. Columbus first practically brought the Old World in contact with the New: and his expedition is the beginning of American history.

[1] Peschel (Zeitalter der Entdeckungen, p. 110) places the supposed correspondence of Columbus and Toscanelli between the end of 1479 and the middle of 1481.

Conditions of discovery in the time of Columbus.

The great undertaking of Columbus, though mainly influenced by the ideas of Toscanelli, was partly inspired by those other contemporary conditions which have been enumerated. Columbus, as we shall shortly find, had visited Iceland: it were strange indeed if he visited it without hearing tidings of the New-found Land or Estotiland of the Northmen. He was well known in the ports of Lisbon and Bristol, where expeditions were continually organised for the discovery of Antilia. He had sailed to Guinea: he had lived, as we shall find, in Porto Santo. He was well acquainted with the history of Atlantic exploration. He knew that it had ceased: and that if the process were to be continued, voyages must be undertaken on a greater scale. To this accumulation of suggestive material corresponded a great advance in the means of executing that which it suggested. The progress of navigation had dissolved that physical obstacle to the Hispano-Indian voyage, which existed in the time of Eratosthenes and Strabo. The compass had come into use, and shipbuilding had reached a point which was scarcely surpassed at the beginning of the nineteenth century[1]. Men-of-war in the fifteenth century carried five hundred fighting men: the Italian merchantmen commonly carried a burden of five hundred tons. Two months at sea was no unusual thing for the Portuguese merchantmen[2]. And the practical part of navigation had advanced to a point which would have astonished not only the sailors of Greece and Carthage, but even those adventurous Italian and Portuguese sailors who so greatly extended geographical knowledge in the thirteenth and fourteenth centuries. Except in regard to perfection of instruments, and, it may be added, the use of logarithms, there was little difference between their methods of navigation and our own[3].

Birth and early years of Columbus.

The fact that the great authority for the life of the Discoverer, the Biography bearing the name of his son

[1] Peschel, Zeitalter der Entdeckungen, b. i. cap. 1.

[2] Ib. b. ii. cap. 1.

[3] Humboldt, Hist. de la Géog. du Nouveau Continent, vol. i. p. 9. The astrolabe was in use at the end of the thirteenth century. Ib. vol. i. p. 277.

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Ferdinand[1], has been lately pronounced by an American critic to be the work of another hand, scarcely modifies the historian's conception of the Discoverer's personality. Its main outlines are confirmed by other and contemporary authorities; and by the same aid it is possible to trace a fairly exact portrait of a character hitherto chiefly known as a hero of romance, and a theme for historical improvisation. Christopher Colombo was the son of a Genoese wool-carder named Dominico Colombo and Susanna his wife. He was born in the year 1456[2]; and was therefore twenty years younger than has been commonly supposed. This fact imparts a new colour to the whole of the Discoverer's career. The greatness of Columbus, like that of most great men, was the growth of his early years. The

[1] Historie del Signor D. Fernando Colombo: published at Venice in 1571, as a translation from a Spanish original not hitherto discovered, thirty-two years after the death of the alleged author. This work, designated by Washington Irving 'the corner-stone of the history of the American continent,' passed for genuine until the publication of Mr. Harrisse's Essay in 1871. See Mr. Harrisse's Fernand Colomb, sa vie, ses œuvres, Paris, 1872; and the Bulletin de la Société de Géographie, 6me Série, vol. v. p. 385; vol. viii. pp. 400, 493.

[2] On this point I follow Peschel. See his Abhandlungen über Erd- und Völkerkunde (ed. Löwenberg, 1877), p. 211. Navarrete and Humboldt say 1436; Muñoz and D'Avezac, 1446. Columbus makes only three statements from which any conclusion can be drawn as to his age. 1. In his letter to the King and Queen from Jamaica, July 7, 1503 (Navarrete, vol. i. 2nd ed. p. 459), he says that he came into the Spanish service at twenty-eight years of age, and that now he has not a hair which is not white. He arrived in Spain in 1484, and calculating his service from this date it results that he was born in 1456. 2. In the letter quoted in the text below, written in 1501, he says that he has been a seaman for forty years, and that he went to sea at a very early age indeed (de muy pequeña edad). Even taken literally, this tallies with the date 1456; but 'forty years' is possibly a round number, the true one being something less. The premature whiteness of his hair may account for the current belief, expressed by Bernaldez and Oviedo, that he was older. The statement in the letter of 1503 loses all its meaning on the supposition of Navarrete that there is an error in the copies, and that the true reading is forty-eight. The contention of Columbus is that he has spent the best part of his life and grown grey in the service of the Catholic monarchs. 3. In the Journal of his first voyage (Navarrete, vol. i. p. 250), December 21, 1492, he remarks that he has been twenty-three years at sea without intermission: 'Yo he andado 23 años en la mar, sin salir della tiempo que se haya de contar.' The exact place of his birth is uncertain; but it was within Genoese territory. The brothers Columbus sometimes described themselves as 'of Terra-Rossa' ('de Terra Rubra,' see p. 117). A hamlet of this name exists in the Commune of Garelli in the upper valley of Oneglia. Colombo (Pigeon) was a common Italian surname.

formation of his project belongs to mere youth, and its execution to early manhood: for Columbus was only thirty-six years of age when he reached the West Indies, and only half a century old when he died. Dominico, his father, though of plebeian birth, was a man of some wealth: he possessed two houses of business, one situated within the city walls, the other without. If we may take the words of the Discoverer himself in their literal sense, he went to sea as a lad, and never changed his occupation: and the evidence which antiquaries have hailed with so keen a relish, tending to show that Christopher passed as a boy into his father's trade, and was so engaged as late as 1473, probably indicates a merely nominal membership of the family trading-guild. 'At a very early age,' he writes to the Spanish monarchs in 1501, 'I became a sailor: and a sailor I have been ever since. The sailor's calling breeds in those who follow it a desire to know the secret things of this earth. For forty years have I followed this calling. Whithersoever men have sailed, to this day, thither have I also sailed. I have held traffic and converse with the wise and prudent, churchmen and laymen, Latins and Greeks, Jews and Moors, and many others of other persuasions. I found the Lord to be gracious to this my desire, and received from him the spirit of understanding. In seamanship he made me abundant: of astrology he gave me what sufficeth, also geometry and arithmetic: also wit in mind and hand for to draw the sphere, and therein the cities, rivers and mountains, islands and ports, each in his proper place. During this time have I seen, and made it my study to see, all writings, cosmography, histories, chronicles, philosophy, and other arts, so that the hand of the Lord plainly opened my understanding to see that it was possible to sail from hence to the Indies, and set on fire my will for the execution thereof, and with this fire came I to your Highnesses[1].' Columbus was thus a self-taught man. The story of his education at the university of Pavia rests on no satisfactory authority. We

[1] Navarrete (2nd edition), vol. ii. pp. 291, 292; Las Casas, H. de las Indias, vol. i. p. 47.

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ought rather to picture him, like his great successor Cook, beguiling the tedium of his solitary watch by spelling out the elements of the sciences, and preparing by silent meditation for the feats he was destined to accomplish[1].

Bartholomew Columbus.

A younger brother of Columbus, Bartholomew by name, had also settled in Lisbon as a seaman. He is known to have been a skilful and celebrated chart-maker: and contemporary opinion in Italy attributed to him the original conception of the westward voyage[2]. Bartholomew is described as a man of prudence and courage, more astute and reserved than Christopher: a Latin scholar and man of learning, and more skilled than the latter in cosmography and the cognate sciences[3]. From the beginning of the undertaking, which has made the name of Columbus so famous, we find Bartholomew associated with his elder brother. He carried to England the proposal for a westward voyage, while Christopher went with it to Spain. When the discovery had been made, and Christopher had become invested with the title and authority of Admiral, Bartholomew was sent out to join him, and became his adelantado or lieutenant: and perhaps the last effort of his life was the endeavour to procure for his brother some permanent remuneration for his labours. For the rewards of Christopher Columbus were entailed on his own son. His brother, to whom the original suggestion was perhaps due, and whose aid and sympathy had materially contributed to his success, had no part in them.

[1] The education of Columbus at Pavia is asserted in the 'Historie' and in Las Casas. The drift of the discoverer's own statement is certainly that his studies commenced after he went to sea, and there is no clear evidence to the contrary. Reading and writing, the latter good enough, as Las Casas says, to have secured him his living as a penman, and a little bad Latin, formed the whole educational outfit of Columbus. Bernaldez describes him as a very clever man with but little learning—'de muy alto ingenio, sin saber muchas letras.' From him we also learn that Columbus was a dealer in printed books, probably bought in one port for sale in another.

[2] Antonio Gallo, Comm. de Navig. Columbi (Muratori, Rer. Ital. Scrip., vol. xxiii. p. 302); Giustiniani, in his celebrated exposition of Ps. xviii. The former writer is quite free from the spirit of detraction which animated the latter.

[3] Las Casas, H. de las Indias, lib. i. cap. xxix.

Early Voyages of Columbus.

The acquaintance claimed by Columbus with the entire field of navigation, as known in his time, was due to his early engagement in the Portuguese service. In Lisbon, where he married a Portuguese girl named Felippa Moñiz Perestrello, he no doubt entered into the contract usual in those times with the royal *ammiraglio*. This contract left the navigator free to make voyages on his own account when his services were not claimed by the king, through the *ammiraglio*[1], and at the same time conferred on him the distinction of being counted in the king's service. In such a position Columbus spent several years, first in Portugal, then in Spain. His claim to know the whole field of navigation was well founded: for in the Portuguese service he traversed not only the Mediterranean in its whole length, but the Atlantic itself from the Arctic Circle to the Equator. 'In 1477,' he says, 'I sailed in the month of February a hundred leagues beyond Thule (Iceland), the south part of which is distant not 63 degrees, as some say, but 73 degrees from the equator. To this island, which is as large as England, the English, especially those of Bristol, sail with merchandise.' From his observation of the climate of Iceland, together with that of the African fort of Elmina, near the equator, Columbus once more drew the conclusion that no terrestrial zone could be condemned as uninhabitable. Like most of the Portuguese captains, he was mainly engaged in plying between Lisbon and the Guinea coast, and in this service he seems to have gained a degree of experience and nautical skill far above his years. While thus plying to and fro, Columbus often spent some time at Porto Santo, where his father-in-law Perestrello had property[2].

Columbus adopts Toscanelli's plan.

Columbus was fifteen years of age when Toscanelli despatched to Portugal his famous Opinion concerning a westward voyage. Six years afterwards, we find Columbus in the Portuguese service, and meditating on the feasibility of the plan of Toscanelli. His first care was to procure a copy of the letter and chart of Toscanelli. Unable, it

[1] Canale, Storia del Commercio, ubi sup.

[2] Las Casas, H. de las Indias, vol. i. pp 48, 54. Cp. ante, p. 88.

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would seem, to procure these from the Royal archives of Lisbon, he resolved on applying directly to the famous astronomer: and with ready and courteous sympathy Toscanelli at once despatched to him at Lisbon copies of both letter and chart, accompanied by words of encouragement to himself[1]. Having made himself familiar with the details of the plan, the young man bent all his energies to its realisation. He abandoned, however, the search for Antilia. Incalculable time and money had been already spent on this useless errand: and Columbus resolved that in his scheme there should be no waste. He would procure an equipment on a large scale, and sail due west until he reached the shores of the Indies; and in this plan he never once faltered. His first application, naturally enough, was made to the Government of his adopted country. Don John, the successor of Alfonso, was intent on the objects which had busied his predecessors. 'He desired much,' says the chronicler, 'to know new things: many caravels did he commonly keep for discovering throughout the world[2]:' and the rejection of the plan in a quarter where success seemed so likely was quite unexpected, and caused the discoverer no little bitterness. The Portuguese monarch, acting on the advice of his cosmographers[3], declined his offer. 'The Almighty,' says Columbus, writing in after years[4], 'made him blind and deaf to the miracle about to be wrought through the monarchs of Spain.' The fact is that the efforts

[1] See ante, p. 105. The genuineness of the letter, and of the traditional account of the means by which he obtained it, is established by the title in his own writing: 'Copia misa Xpofaro Colombo per Paulum Fixicum cum una carta navigacionis.' For Toscanelli's letter to Columbus himself, and a second one, in acknowledgment of the reply of Columbus, see the 'Historie' or Las Casas.

[2] Bernaldez, Cronica de Los Reyes, c. 50. The Curate in another place laments the ill-success of these expeditions. 'Many a time,' he says, 'did the kings of Portugal send westward over the Atlantic to discover lands, it being the opinion of many that in this direction were to be found countries rich in gold: but never could they find nor discover any land whatever, and always turned back with their labour lost' (c. 118).

[3] Don Diego Ortiz, Bishop of Ceuta, and two physicians learned in astronomy, named Rodrigo and Joseph, are said to have advised the rejection of the plan. Las Casas, vol. i. p. 220.

[4] 'Nuestro Señor le atajó la vista oido y todos los sentidos;' Navarrete, vol. i. p. 528.

of Portugal were concentrated on the circumnavigation of Africa, then all but accomplished. Nor can it be denied that this was the true Portuguese policy. The treaty made with Ferdinand in 1479 confirmed the Portuguese in the possession of their discoveries on the African coast. The southern cape of Africa alone separated this line of coast from the eastern shores, which, as we have already seen, were accounted part and parcel of the Indies[1]. The Indies themselves, in all their length and breadth, were thus obviously on the point of being brought under the commercial sway of Portugal: and the plan of a westward voyage was superfluous. Disappointed of success in the country of his adoption, Columbus next tried that of his birth. He quitted the service of Portugal in 1484, and in the next year went to Genoa, where his plan was also rejected[2]. Nothing else could surely have been anticipated. The revolution which Columbus hoped to effect could only be effected at the expense of the ruin, not indeed of Genoa, but of the bulk of individual Genoese vested interests. The discovery of the Cape route went far to effect this end: had India lain where Columbus and the Genoese Government alike supposed it to lie, this end would have been far more speedily and certainly accomplished. The interest of Genoese merchants clearly lay in the preservation of the existing trade with the East, and in the existing channels. From Genoa he went to the rival republic of Venice[3], but with the same result. The interests of Venice exhibited precisely the same relation to the plan of Columbus as those of Genoa: and he returned in despair to Lisbon. Thus did a plan destined to revolutionise Europe and to win a substantial preponderance in the world for the nation that accepted it, beg its way from court to court and from council to council, until it reached the two nations who

[1] Vide sup. p. 48.

[2] Muñoz, lib. ii. cap. 21; Navarrete, vol. i. pp. lxxix-lxxxi: Humboldt, vol. i. p. 20.

[3] The memorial presented by Columbus to the Venetian Signoria was still preserved in the Venetian archives at the end of the last century, when it was examined by the historian Marin. See his Storia Civile e Politica del Commercio de' Veneziani, vol. vii. p. 236.

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were destined to divide the spoil. Contemporary maps and globes prove that the plan was by no means repugnant to the belief of cosmographers. The prejudice which hampered Columbus in the execution of his design did not question the existence of an Indian shore at a moderate distance across the Atlantic. It questioned, with Strabo, the practicability of reaching it: the probability of deriving any benefit from it: but chiefly the justice and the expediency of making a total revolution in commerce. Yet it was not inspired by that strange conservatism which consists in obstinately clinging to well-worn ways because all intelligent opinion has long since rejected them. The world was on the move: and even those who rejected the plans of Columbus were moving with it. But the Discoverer, as usually happens, was in advance of the world: and some years of buffeting and disappointment no man in such circumstances could expect to escape.

Uniformity of the plan of Columbus.

The greatness of Columbus consisted mainly in his practical capacity as a sea-captain. He knew how broad a margin of sea lay westward of the most westerly islands known to seamen. Many attempts had been made in his time to cross this margin: and Columbus rightly divined why these attempts had failed. They had failed because they had been undertaken on a scale too small to admit of the proper prosecution of the enterprise. They had been made by one or two insufficiently equipped vessels: and it was natural for these vessels to return after a few days' sail in the west and report that nothing was to be found. Columbus proposed to equip a squadron of three vessels, fully manned, and provided with all necessaries for a voyage of twelve months. Once in command of such a fleet, he proposed to start in the latitude of the Canaries, and to sail due west before the trade-wind. The trade-wind, unless the laws of nature were suddenly reversed, would carry him to the Indies in a few weeks. This plan admitted of no abatement or modification. Columbus would accept no armament which he judged unequal to the task: and hence the rebuffs which he encountered. It is said that soon after the King of Portugal had declined his offer, a

Portuguese vessel was despatched to ascertain by actual exploration what amount of truth there might be in his representations, and that the return of this vessel, with no better result than its predecessors, confirmed the Portuguese king in the wisdom of his refusal. The story is exceedingly probable. What the occasion demanded was a large plan, courageously and skilfully carried out. Every shot aimed below a certain mark was sure to fail: and Columbus stood alone in discerning what that mark ought to be. A man of less capacity would have accepted a smaller equipment, and have failed. Columbus went from capital to capital, offering, though he knew it not, the New World in exchange for three ships and provisions for twelve months.

Proposals of Columbus to Spain and England.

The natural effect of the ill success of Columbus with the Governments of Portugal, Genoa, and Venice, was to direct his thoughts to the two powerful and rising monarchies of Spain and, England, not yet ranged in that memorable antagonism which determined the course of American history. Columbus knew little of merely political considerations. He knew that each of these countries carried on a considerable trade with India through the medium of Venice and Genoa, and that in each of them he might well expect to obtain a hearing for a project which aimed at establishing a direct route to the East. The causes of the antagonism of Spain and England had not yet come into being. Three times in the history of Europe has such an antagonism determined the course of events at a critical juncture. When the Greeks repelled the aggression of Persia, when Rome destroyed the empire of Carthage, and when the Low Dutch race in England and the Netherlands withstood the tyranny of Spain, the high interests of civilisation were alike at stake: and the strife of the Teuton and the Spaniard for that New World which is now shared between them is twice foreshadowed in the history of its discovery. Columbus resolved to make application in his own person to the King and Queen of Spain, and to despatch his brother Bartholomew simultaneously to the King of England. In the winter of 1484 he quitted Portugal

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secretly[1]. Some friendly sailors belonging to the port of Palos, in Andalusia, whence, nearly eight years afterwards, his memorable expedition actually started, aided him in his escape: and he arrived at Palos towards the end of 1484, carrying with him his little son Diego. In seeking this port the Discoverer took the ordinary route from Lisbon by way of Seville to Cordova, where the Spanish court then was. A great highroad, perhaps two thousand years old, still leads from Palos and Moguer to the rich valley of Andalucía, enabling the traveller from the north to avoid the circuitous voyage through the desolate and pestilential salt-marshes of the Guadalquivir. Columbus went to Palos to make a short cut to Seville, just as the French traveller goes to Dover to make a short cut to London. It was probably not his first visit to the place. He made no secret of his business: and the Pinzons, who afterwards took part in the execution of his project, gave him encouragement, and perhaps money. The hospitable monks of Santa Maria de la Rábida, about a mile from the town, received him in their house, took charge of the boy Diego, and furnished him with a safe passport to the ear of the court at Cordova, in the shape of a letter of commendation to one of the Queen's confessors.

Bartholomew Columbus goes to England.

Meanwhile Bartholomew had sailed for England, to seek an audience of Henry Tudor, whose sagacity and foresight were already noticeable abroad in the English social and political revival. The offer would have been well timed. Powerful at sea, rich through commerce, and growing yearly in foreign influence, England was in truth better qualified for such a task than any continental power except France: and the keen eye of Columbus had doubtless already discerned in the busy ports of England an element well adapted to his great purpose, and perhaps destined in the end to work mighty changes in the world's

[1] From the caution observed by Columbus when at Lisbon in 1493. and from the letter of the Portuguese king to Columbus, written some years after, and securing him against arrest on account of any civil or criminal process, it has been conjectured that Columbus quitted Portugal in secret because he was in fear of being arrested for debt.

relations. A hundred years later the English nation did in fact seize the place which Columbus thus assigned it: and adverse accidents alone prevented it from being thus from the beginning. Four years elapsed before the project reached Henry's ears. In the English Channel Bartholomew Columbus fell among pirates[1]. Stripped of all that he had, he was fain to wander back to Portugal, and once more serve for hire under others. It happened that he took part in a memorable expedition. Bartholomew Diaz was then setting out for the voyage in which the Cape of Good Hope was first reached by Europeans: and on this voyage Bartholomew Columbus accompanied him. On his return, he sailed once more for London, and laid the famous project before the English sovereign. Upon his landing on the shore of the Thames, he spent some time in painting a magnificent chart, constructed on the directions of Toscanelli, but signed with his own name, in which the feasibility of the Columbian voyage was clearly demonstrated. Nor was the project unfolded in vain. Henry at once discerned its substantial merits, and desired Bartholomew to summon his brother forthwith to England[2]. But the prospect of success in Spain, delay and some dis-

[1] Nothing is more probable, as will be shown hereafter in tracing the rise of England's naval supremacy.

[2] Las Casas, vol. i. p. 224; Bacon, Hist. of Henry VII. The former has preserved the verses inscribed on the map of the world which Bartholomew exhibited to Henry. They are also found with some variations in the 'Historie.'

'Terrarum quicunque cupis atque aequoris oras
Noscere, cuncta decens haec te pictura docebit:
Quam probat et Strabo, Ptholomeus, Plinius atque
Isidorus, non una tamen sententia queis est.'

These lines must have been written at the top. Off the African coast, apparently, were written these lines, which Las Casas found partly illegible:—

'(Pingitur) hic etiam nuper sulcata carinis,
Hispanicae zona illa prius incognita genti
Torrida: quae tandem nunc est notissima multis.'

And at the bottom, also partly illegible:—

'Gennua cui patria est, nomen cui Bartholomaeus
Columbus de Terra Rubra, opus edidit istud
Londoniis: anno domini millesimo, quater-
Centesimo, octogesimo, atque insuper anno
Octavo, decimoque die mensis Februarii.
. . . . laudes Christo cantentur abunde.'

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couragement notwithstanding, was far too good to permit Christopher to abandon it. In the shrewd and ambitious monarchs of that country he had found a ready response to his appeal.

Growth of a great monarchy in the Iberian Peninsula.

The two springs of American events are Spain and England: and the history of America consists in the gradual predominance of the one over the other. A century passed before England entered the field. During this century, the causes of American history were wholly Spanish: and it is therefore impossible to understand it without some general conception of Spain. The power which suddenly overshadowed both America and Europe had sprung up like a mushroom. America enabled the monarchs of Spain to maintain an artificial position: for the Iberian peninsula had been as unimportant in mediæval times as it has been during the present century. Belonging by nature not to Europe, but to Africa, its history had followed its physical conditions[1]: and even while Toscanelli was penning his letter to the canon of Lisbon, Spain was as yet a mere geographical expression. A few months afterwards, a great change happened. The King of Castile died without heir-male: the King of Portugal and the Crown Prince of Aragon, each determined to secure predominance in the Peninsula by a Castilian marriage, fought for the prize; and the latter won by the battle of Toro in 1476. By this marriage of Ferdinand with Isabel of Castile, and the death of his father in 1479, a monarchy came into existence which included the whole Spanish peninsula except the kingdoms of Granada in the south, of Portugal in the west, and of Navarre in the north: and in another century all these had been absorbed, and much more also. The historical character of this new power was determined by its antecedents. The true spirit of European monarchy is exemplified in the history of the fifteenth century. The bold and manly policy

[1] The Iberian peninsula was populated by the North-African or Hamitic race, the boundary between this race and the Indo-Germanic, or Japhetic, being the Pyrenees: and the incidents of the Carthaginian and Roman periods, and the long Saracen occupation, alike confirm the axiom that for historical purposes the Pyrenees are the boundary of Europe. The history of Christian Spain is a history of the growth of European colonies, of the feudal type, on a foreign soil.

of the thirteenth, the brilliancy and enterprise of the fourteenth, had passed away: and the typical Prince was the false, subtle, avaricious, and grasping being who stands pilloried in the immortal pages of Macchiavelli. Ferdinand, like his successors Charles and Philip, was a master in his craft. To consolidate and extend his conquests, to repress the power of the nobles, to gather up the whole machinery of government in his hand, and to gain for himself a higher and higher place in wealth and power among European sovereigns, were the aims which he steadily followed, and fortune steadily favoured him in the pursuit of them. After crushing the Portuguese faction where it still survived in Castile, he turned his arms against the remnants of Moorish domination in the Peninsula. Loja, Malaga, and Baza were won in succession between 1486 and 1489; and nothing then remained but Granada itself.

Internal colonisation in Spain.

The incidents of the conquest of Malaga may here serve to illustrate the colonising process which the Spanish adventurers employed in the districts wrested from the Moors, and which they applied, with some modifications, to the districts in the New World wrested from the aborigines. The captive inhabitants, in the first place, were divided into three lots, and sold as slaves. The proceeds of one third were destined for the redemption of Christian captives in Africa; another third belonged to the military adventurers and officials; the remaining third was paid into the Castilian treasury[1]. The *repartimiento* of the original inhabitants thus completed, the land was laid out for a colony or *poblacion*. There was enough to satisfy all applicants; and it was freely granted out to those who desired to occupy it, on easy conditions. The peninsula had always been a sparsely populated country: and every encouragement had been held out to induce the farmer to colonise the vast tracts which the displacement of the Moors threw into the hands of the Crown and of the municipal corporations[2]. In the previous century the Moors had kept their personal liberties, and been encouraged to settle and form subject colonies on the

[1] Lafuente, Historia de España, vol. ix. p. 340.
[2] Id. p. 494.

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outskirts of the Christian cities[1]: and the successful settlement of the vast regions conquered by the Christian arms was greatly due to their co-operation. The new Spanish policy changed all this; and no faith was kept with the Mahomedans, even where they were strong enough to exact favourable terms on their submission[2]. Moorish enterprise thus checked, a check was given to the internal colonisation of Spain itself. It is easy to see how this state of things reacted upon America. A large country which was itself only half occupied was not likely to found successful agricultural colonies: and the colonisation of the New World thus lapsed into other hands.

The Canaries.

The peace made in 1479 between the successful Prince of Aragon and his defeated rival of Portugal finally directed the operation of those causes which were silently forcing on the discovery of America. By that peace Ferdinand renounced all claims on the western coast of the African continent, in exchange for a renunciation of the Portuguese claims to the Canaries: and the paths of the two Peninsular powers were thus permanently separated. Portugal was free to push on unmolested round the coast of Africa: if Spain desired to reach the Indies, she must set her face westwards. Ferdinand proceeded to recover possession of the Canaries. Hitherto four islands only had been conquered by Europeans: Palma, Teneriffe, and the Gran Canaria were still obstinately defended by the natives. Early in the century the islands had been sold by the Bethencourts to the great Count of Niebla, whose son became first Duke of Medina-Sidonia. The Count sold them to a Castilian adventurer called Peraza, whose son and successor perished in an attempt to occupy Palma, leaving his heritage to a daughter, who became the wife of an adventurer called Diego de Herrera. When Ferdinand made his treaty with Alonzo in 1479, Herrera and his wife lived at Gomera, styling themselves King and Queen of the Canaries. Ferdinand despatched a force under two Castilian captains to reduce the Gran Canaria. The

[1] Janer, Moriscos de España, pp. 208, 212.

[2] See post, p. 123, note.

captains quarrelled; one of them slew the other, and the survivor was himself slain by young Herrera, who at once arrived from Gomera to dispute Ferdinand's annexation of his heritage. Ferdinand, however, conquered the Gran Canaria, and reduced the Herreras to submission[1]. They brought an action against the Crown to recover their little monarchy. In this they naturally failed, but they received some compensation, and were permitted to remain the feudal lords of Gomera.

Columbus in Spain.

The often-repeated story of the difficulties encountered by Columbus in procuring the acceptance of his project in Spain is wholly without foundation. Seven years, it is true, elapsed between his arrival at Palos from Portugal, and his departure from Palos in search of India. But this delay was due to the circumstances of the time. Irksome though it may have been to Columbus, it took place with his full consent. His path was in fact rendered smooth and easy by the reputation he had won as a master of navigation. Soon after his arrival in Spain, he was admitted into the service of the Duke of Medina-Celi, who, like many rich noblemen of the time, was an owner of ships. This service he quitted in January, 1486, for that of the Crown of Castile[2]: and so false is the common story of the difficulties he encountered in Spain, that the Queen and the Duke actually competed for the advantage of executing his plan. His first proposals were made to the Crown: and more for the purpose of gaining time than as a real help to decision, these proposals were referred, as in Portugal, to a junta of counsellors. The advisers of Isabel were churchmen, and regarded that long-debated question which to them appeared involved in the project of Columbus from the churchman's point of view. Favourably though they regarded it on the whole[3], it was impossible to overlook the authority of Augustine to the contrary. 'Saint Augustine

[1] Bernaldez, Cronica de Los Reyes, cc. 65, 66. The Great Canary was conquered in 1483, Palma in 1493, and Teneriffe in 1495. Id. cc. 132, 133.

[2] Navarrete, vol. i. (2nd ed.) p. 93.

[3] Navarrete, vol. i. pp. 93, 94. The Curate of Los Palacios is explicit on this point: 'La opinion de los más de ellos, oida la plática de Cristobal Colon, fué que decia verdad.' Cronica de Los Reyes, c. 118.

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doubts it,' was the refrain of their discussions[1]. But the doubts of the African father and the obstinacy of ecclesiastical opinion were not the real obstacles which delayed Columbus. The doctrine of antipodes was not seriously doubted by any man of sense and information: and had the theological cavil which discredited it been admittedly conclusive, it could not have affected the Columbian hypothesis, which rested on the firm and sufficient basis of the earth's sphericity. The simple fact is that the united Crowns of Aragon and Castile were at present in no position to authorise fresh undertakings. The treasury of Castile was exhausted in the great war with the Moors of Granada: and Columbus was induced to postpone his expedition until this war should be successfully concluded. He would otherwise have sought France or England long before that event happened.

He did, however, patiently abide the convenience of the Spanish monarchs: and that Isabella not only approved his plan, but speculated on its execution at her own expense, is decisively proved by the fact that she restrained the first Spanish protector of Columbus from taking it up. The Duke of Medina-Celi was keenly interested in the project of Columbus. On learning that the Queen had put the adventurer off for a season, this nobleman offered the means which he required. The three caravels now seemed within his grasp. The preparations for the voyage were in fact already in progress, when the Duke petitioned for the royal licence. It was refused. The Castilians were on the eve of capturing Granada: and Isabella, fully intending to undertake the project on her own account, ordered the Duke to be reimbursed his expenditure[2], and Columbus to be summoned to the camp. Columbus was present when, on the second day of January 1492, the double standard of Castile and Aragon was hoisted on the towers of the Alhambra, and the Moorish King passed through the gates of the city, and kissed the hands of the

[1] 'Ansi traian por refran, "duda Sant Agustin."' Las Casas, vol. i. p. 230.

[2] Las Casas (vol. i. pp. 237–239) adopts this version of the story, on authority which seems trustworthy. But see Navarrette, vol. i. p. 75.

Christian monarchs[1]. The long-deferred moment had now come, and the question of the westward mission to India quickly came on for settlement. It was not settled, however, without some difficulty. The approval previously given had been given only in general words: and a struggle ensued, which would be discreditable to Isabella but for the probability that it was due to the prejudices of courtiers and officials, as to the exact terms to which the prospective discoverer was to be entitled in the event of success. As the simple Italian seaman had insisted on his whole plan or nothing, so he now insisted on his whole reward or nothing. On the eve of success he maintained a stiff and peremptory attitude. The courtier may well have laughed when the penniless adventurer demanded for himself rights far greater than those with which the noblemen who had hitherto patronised Atlantic discovery were usually invested. A thousand or two of ducats would amply recompense this poor Genoese: the Castilian Crown might fairly keep for the present in its own disposal the stately offices of High Admiral of Castile for the Indies, of Viceroy in Antilia and Cipango, and of Ambassador to the Grand Khan of Cathay. But Columbus had determined that no powerful nobleman or court favourite should reap the fruits of his labours. The encouragement he had by this time won forbade him to abate his terms. Even if he should fail of success in England, where success seemed probable, there remained yet another western power: and when Isabel, counting on his anxiety to realise his plan, without regard to his own ultimate interests, refused to invest him with an hereditary admiralty and viceroyalty in the lands to be discovered, he actually quitted Granada,

[1] Columbus, Preface to Journal of First Voyage. It is interesting to reflect that Columbus and the Moorish nation were destined to be equally the victims of Castilian perfidy. Liberty of person, trade, education, and worship, the protection of Mahomedan law, administered by Mahomedan judges, and the benefit of mixed tribunals, were secured to the Moors and their descendants by the capitulation of Granada. No sooner were the Castilians secure in their conquest, than Christianity was forced upon the Moors: and ultimately their descendants, even though professing Christianity, were expelled from Spain in the mass. Columbus was summarily deprived of his covenanted reward, without the opportunity of defending his rights.

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avowing his intention of making his way to France. Perceiving her mistake in time, Isabella sent a messenger to recall him. He had ridden to a distance of two leagues from the city, when he was overtaken and brought back to the court.

Contract of Columbus with the Crown of Castile.

The fortunes of Columbus and of the New World were decided at once when he was overtaken by the royal messenger at the Bridge of Pinos. This implied that his terms were accepted in their entirety: and Columbus retraced his steps to the court, where the Asiento, or contract between the sovereigns and himself, was formally drawn up and signed on the 17th day of April, 1492. It included five articles. Firstly, Columbus was appointed royal ADMIRAL for life in all the islands or main-lands in the ocean which might by and through him be discovered and acquired for the Spanish Crown. The office was made descendible to his heirs, and its privileges were declared to be identical with those enjoyed at home by the existing High Admiral of Castile. Secondly, for administrative purposes, Columbus was appointed VICEROY, or GOVERNOR-GENERAL, in such islands and main-lands: and for the sub-governorship of each island and province, he was to propose to the Crown three names for the queen's choice. Thirdly, he was to receive one clear tenth of all merchandise, whether gold, silver, pearls, spices, or whatsoever, to be gained or gotten for the Crown within his Admiralty. This was to be computed on the net return; after deducting all costs and charges, the Crown was to receive nine-tenths of the balance, and Columbus one-tenth. Fourthly, the jurisdiction in all causes arising out of the trade of the said islands and main-lands was declared to be appendant to the new Admiral's office, so far as a similar authority was appendant to the said High Admiralty of Castile. Fifthly and lastly, in case Columbus should choose to contribute to the equipment of vessels employed in the new trade to the extent of one-eighth part thereof, he was to be at liberty so to do, thereby entitling himself to one-eighth part of the profits. This stipulation, often supposed to have been proposed by Columbus by way of answer to

those who objected that he was claiming everything and risking nothing, rather anticipates a commerce of which none could foresee the limits, and whose magnitude ought to yield a proportionate return to its founder and his representatives: and it is certain that a similar stipulation had formed part of the original project which was rejected by the King of Portugal eight years before. The contract was substantially the same with those under which Atlantic discovery had been prosecuted for nearly two centuries. But an unusual effort had now to be made. A vast gulf had to be bridged over by an effort of seamanship: and it was in consideration of this that there were added to the substantial rewards of success other rewards importing high personal dignity. The Admiral of Castile, whose honours Columbus was to enjoy in those new countries which he proposed to discover, was a personage of the highest consideration. He was viceroy on board the king's fleets, between port and port. He was a Don, or nobleman, and kept watch in knightly fashion, within a church, on the night before his institution, which consisted in investing him with a ring, a drawn sword, a crimson silk dress, and a banner with the Castilian arms. When the Spanish sovereigns entered the Moorish towns in Andalucia, Columbus had seen the Admiral of Castile parading in this official costume: and he resolved that in this very costume he would land in the Indies.

Conquest of the Holy Sepulchre.

Personal ambition was not the only motive which Columbus united with the desire to accomplish a great feat of seamanship and to revolutionise the relations of the East and the West. He intended his successes to be subsidiary to a great historical object. He aspired to revive the languishing animosity of Christian Europe against the infidel possessors of the Holy Sepulchre, and to be the leader of a new crusade. To this object he intended to devote the wealth derived from his great scheme: and when its complete failure, in a commercial sense, prevented him from pursuing this object in person, he strictly enjoined it as a task upon those who should come after him. In France chiefly, since the collapse of the great crusading movement,

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the dream of recovering the holy places for Christendom still faintly survived. Attention had been recently drawn to the treatises of the Dominican friar Brochard, written for Philip the Fair, to indicate the methods of future crusades, a century and a half before[1]; and a few years before the birth of Columbus a Burgundian esquire who had sojourned in the East had urged the equipment of an European force to check the further progress of the Turks, and to drive them out of Europe[2]. In Italy, ideas similar to those of Columbus had inspired Æneas Sylvius and the Minorite Capistrano, and they were heightened by the spectacle of the Turks in possession of the capital of Eastern Christendom. But they met with little or no response in the world outside, where the spirit of religious enthusiasm was gradually yielding to a regard for secular and more immediate interests: and they only serve to indicate how completely the Discoverer was dominated, in his heart of hearts, by the genius of the Middle Ages[3].

Preparations of Columbus.

When Columbus first reached Palos in 1484 as a penniless adventurer, he found friends in two worthy seamen named Martin and Vincent Pinzon. These not only gave him kindly encouragement, but rendered him substantial assistance. In case his project ever took effect, each was to have a share in it: and the plan of a joint voyage, in which Columbus was to command a great ship, and each of the Pinzons an undecked caravel, was perhaps settled at Palos before Columbus set out for the Spanish Court. Such was the arrangement now made. By a feudal service usual throughout western Europe, the men of Palos were bound to serve the Castilian king, in case of need, with two caravels and provisions for three months. Martin Pinzon easily procured a third: and Columbus was then in posses-

[1] Miélot had translated Brochart into French in 1455.

[2] De La Brocquière, in Wright's Early Travels in Palestine, p. 367.

[3] See Ranke (Hist. of Popes, book i. ch. i. § 4) on the 'coldness evinced in the fifteenth century towards every appeal in favour of a combined resistance to the Turks. . . . Neither exhortations, nor entreaties, nor example could avail to move the people of his times (Aeneas Sylvius, Pius II). The youthful enthusiasm of chivalrous Christendom had passed away: no Pope might ever awaken it more.'

sion of three vessels: the Santa Maria, a decked vessel in which he himself sailed; the undecked Pinta, the command of which he gave to Martin Pinzon; and the Niña, the smallest, the command of which was given to Martin's brother Vincent. The three caravels differed in size and in sailing capacity[1]. The Santa Maria was of a hundred tons; the others of about half that burden. The Santa Maria was an unwieldy vessel, and larger than Columbus wished. The Pinta was the fastest sailer, but she was in bad condition. Columbus took with him provisions for twelve months, and a store of such trifles as the Portuguese traders exchanged for gold with the natives of Africa. He also carried with him a letter from the Catholic kings, to be delivered to the Grand Khan of Cathay. Several gentlemen adventurers accompanied him; and these, together with the ships' crews, made up a total of a hundred and twenty persons, all told. There were no extraordinary preparations. The plan of Columbus, by this time well matured, was in fact extremely simple and easy of execution. The horse-latitudes once crossed, and that great natural ocean highway, the zone of the trade-winds, once gained at the Canaries, the thing was done: for in sailing from the Canaries to the West Indies it is hardly ever necessary to touch the sails of the vessel[2]. Considerations of general prudence and convenience suggested the division of the risk. Any one now planning a similar expedition would probably employ three light vessels in preference to one or two larger ones: and Columbus must have felt the value of this precaution when, on the Christmas morning following, he found himself wrecked off Hayti in the Santa Maria and deserted by

[1] The three-masted caravels of the time of Columbus may still be seen, though somewhat lower and less tub-like in build, plying in the Gulf of Valencia and on the coast of Catalonia. For the seafarer who required safety, convenience of stowage, and ease of manipulation, rather than speed or a graceful appearance, they left nothing to be desired. Compare De la Gravière, Les Marins du 15me et du 16me Siècle, vol. i. p. 39.

[2] Imray's Atlantic Navigator, 4th edition, p. 519. 'If there were a channel through the isthmus of Panama,' says the writer, 'a westward passage from Europe to China would be more speedy and safe than the usual navigation thither round the Cape of Good Hope.'

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the Pinta, and again when, returning with only two vessels, in the midst of the storms of February he lost sight of the Pinta, and feared that all news of his discoveries would go down with himself in the Niña. Columbus would have taken the same course across the ocean, whichever among the European powers had employed him: but the patronage of Spain gave him one advantage. It enabled him to employ one of the commodious roadsteads of the Canaries as an ultimate starting-point. Gomera was the only island in which colonisation had hitherto made any progress: and it was here that Herrera and his wife had lived as King and Queen of the Canaries. The Gran Canaria had only recently been wrested from the natives: Teneriffe and Palma, now the most important islands, were still unconquered.

First Voyage of Columbus —Palos to Gomera.

The poor village of Palos, a quarter of a mile from the river, and the deserted bank where the hulk of a ferry-boat sometimes lies, give no hint of the active scenes of four centuries ago[1]. Not only Columbus and the Pinzons, but nearly all the seamen whose names are famous in American discovery, dwelt in this poor village, and sailed from this silent and useless wharf. Five hundred years ago, as we have seen, it was the high road from the ports of Galicia and Asturias to the rich valley of Andalucia: and the departure of a squadron such as Columbus commanded was often enough witnessed by the monk of La Rábida, from the walls that glistened on the rocks over a gloomy forest of pines. Columbus had fixed his departure for Friday the third day of August, 1492. He ordered his crews to be on board on Thursday; and half an hour before sunrise on Friday the three vessels left their moorings at Palos, hoisted sail, and dropped with the tide down the little river Tinto towards the ocean. At eight o'clock the bar of Saltes was passed, and the little fleet stood out to sea with a strong

[1] 'What surprised me was to find no semblance of a seaport. . . . Its race of merchants and mariners are extinct. There are no vessels belonging to the place, nor any show of traffic. . . . The people are totally ignorant, and it is probable that the greater part of them scarce know even the name of America.' W. Irving, 'A Visit to Palos.' Of late years mining enterprise has revived navigation on the Tinto.

breeze. Keeping a south-westerly course, they made for the Canaries; for Columbus intended to take in water and provisions in the roadstead of Gomera. It was well, as it happened, that such a halting-place lay in the course. The Pinta, on which Columbus had laid hands hastily, and much to the discontent of her owners, was in no condition for the voyage. She was leaky and ill-rigged: and on the fourth day of the voyage she unshipped her helm. Columbus therefore left the Pinta at the Gran Canaria, and sailed on to Gomera, in hopes of finding there another vessel to take her place. Failing in this, he returned to the Gran Canaria, and saw the Pinta beached, thoroughly repaired, and newly rigged. These operations considerably delayed the expedition. They occupied the rest of the month of August: nor was it until Sunday the second day of September that the three vessels arrived in the roadstead of Gomera[1].

Gomera.

The land-locked roadstead of this little island, called St. Sebastian's bay, was the ordinary halting-place of Columbus and his followers in their voyages to the New World. The village nestles among bare sunburnt mountains. The anchorage is good, and vessels can lie within a cable's length of the shore, in close view of the village. The island was still the fief of the widow of Herrera[2], who, surrounded by a few Spaniards of some consideration, ruled the primitive inhabitants in patriarchal fashion. Though a century and a half had elapsed since Europeans took possession of the Fortunate Islands, they were mainly inhabited by the Guanche natives, who still retained their simple pagan life[3], which reminded travellers of the Greeks of Homer. They had a legendary history, contained in

[1] Las Casas, vol. i. p. 264; Journal of Columbus, ap. Navarrete, vol. i. p. 156. Notwithstanding the ill condition of the Pinta, M. Jal, a competent judge, speaks highly of the general sailing capacities of the caravels of Columbus. Archéologie Navale, vol. ii. p. 234.

[2] Inez, the heiress of the Perazas (see ante, p. 120). Diego de Herrera was dead: Inez survived him twenty years, and died at Seville. Their son William was created first Count of Gomera.

[3] 'Canarias, ad haec usque tempora hominibus nudis, eo quod extra omne clima Europae ad meridiem, et sine ulla religione degentibus, habitatas . . . . Colonus adivit.' Peter Martyr, Dec. 1. ch. 1.

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lays sung to a rude music: and fragments still exist, which recall the grace of Theocritus[1]. The Spanish gentlemen who dwelt in the island confirmed Columbus in his hopes. They all averred that every year land was visible to the west of Ferro. Columbus compared this information with the statement of an inhabitant of Madeira who had come to Lisbon in 1484 to ask a caravel from the king. Every year, he declared, he saw land to the west of Madeira, and always in the same direction and of the same apparent extent. Columbus also remembered that precisely the same thing was reported in the Azores. Of these fancies, though not devoid of significance, Columbus took little heed. His plans were laid in something deeper. No chase of a mirage would he suffer to exhaust his resources and disappoint his hopes: and having supplied himself with water and fresh provisions, he quitted the bay on Thursday the sixth of September. Yet again delay awaited him. At the Canaries, brisk trades are prevalent all the year round, and it is consequently easy work to get away. But their regular course is in places interrupted by calms sometimes extending twenty or thirty leagues to the leeward of the islands. Columbus lay becalmed for two days. At length, about three o'clock on Sunday morning, the welcome north-east breeze reached the little fleet as it lay between Gomera and Teneriffe. While the wind made a rough sea, it drove the caravels merrily before it. Columbus laid his course due west: and Sunday the ninth of September saw him fairly started on his adventurous expedition.

The Ocean Voyage. First week.

It was not until near the end of the fifth week after quitting the Canaries that Columbus sighted land. Such an event as this voyage happens but once in the world's history: and the historian of America is prescriptively entitled to dwell on its details with lingering interest[2]. These details

[1] Borÿ de Saint Vincent, Essai sur les îles Fortunées, pp. 66, 87.

[2] The original log of Columbus is now lost. But Las Casas, who had access to it, made for his own use extracts which are sufficiently copious. They are printed in Navarrete, vol. i. (2nd ed.) pp. 153–313, in great part incorporated in the Hist. de Las Indias, vol. i. pp. 266–290.

are well known: and few events in history are capable of being more fully described. The better to hold in check his timid ignorant crews, Columbus had recourse to that device which is known to moralists as the 'salubrious falsehood.' From the first he kept two reckonings, each of which was duly entered in the log: the true one for his own information, and a false one, shorter by about a fifth or sixth, for that of the crews. Thus by the first of October the *cuenta publica*, or reckoning exhibited by Columbus to the crew, showed a distance of 578 leagues west of Ferro: the real distance was 707 leagues. A day or two after losing sight of Ferro, the floating butt of a ship's mast was noticed: Columbus estimated the ship to which it had belonged at 120 tons burden. A day or two afterwards appeared an alarming portent. At nightfall on Thursday in this first week, as the sailors watched the first glimmer of the stars, it was suddenly perceived that the compasses had nor'-wested [1]. The variation was too slight to create alarm, but it appeared to increase. On Saturday evening in the first week a marvellous fiery meteor was observed at a distance of four or five leagues, which produced some alarm among the crew. Columbus noted down in his log the pure and balmy airs that henceforth marked the mornings. These he compared to those of an Andalucian April, remarking that nothing was wanting but the nightingales [2].

Second week.

On Sunday the first day of the second week, Columbus saw a sight which appears to have been wholly new to him, though Phœnician sailors had made a similar phenomenon known to the ancients [3]. He had reached the so-

[1] Journal, ap. Navarrete, p. 160, Friday, September 13: 'En este dia, al comienzo de la noche, las agujas norouestaban, y à la mañana norouestaban algun tanto.'

[2] Id. p. 161: 'Dice aquí el Almirante que hoy y siempre de allí adelante hallaron aires temperantísimos: que era placer grande el gusto de las mañanas, que no faltaba sino oir ruiseñores. Dice él, y era el tiempo como Abril en el Andalucía.

[3] Peschel, Gesch. der Erdkunde, p. 25. Columbus might have observed the Gulf-weed in his Guinea voyages. From March to June its delicate stalks, currant-sized leaves, and brown berries may be seen in the Bight of Benin, drifting in patches a mile long on the Guinea current.

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called Sargasso or Grassy Sea: a marine district studded over with bushes of fucus, and resembling a vast inundated meadow, over whose watery surface innumerable bunches of coarse grass lie scattered like furze or heath. These masses of fucus are detached from the Florida coast by the Gulf-stream, and welter back over the ocean with the Trade-winds: and it was not altogether without reason that they were supposed to announce land. But the Sargasso Sea, as a glance at the chart shows, covers more than thirty degrees of latitude: and Columbus found the weed in his path until within a week of reaching land. On Monday evening the attention of the crews was distracted by the great increase in the variation of the compass[1]. Columbus quieted them by assuring them that the Pole-star must have moved. General alacrity and good spirits at this time animated the crew. He noted down each petty incident of the day, a crab caught in the fucus, sea-birds flitting about the rigging, a tunny fish killed on the Niña. As yet, no ominous murmurings at the length of the voyage, nor doubts as to the return: a steady wind, fair weather, and a sea like the Guadalquivir at Seville. In these circumstances the voyage became a sailing match; for a pension of ten thousand maravedis had been promised to whosoever should first descry land. The Pinta, being the fastest vessel, crowded all canvas. On Tuesday Martin Pinzon noticed a great flight of birds to the west, and confidently expected to reach land in the evening. On Wednesday similar hopes were entertained on other grounds. The wind dropped, and a light rain simultaneously began, which was thought a sure sign of land. As no land appeared, Columbus concluded that he must be passing either to the north or south of it. It might perhaps be St. Brandan's, or Antilia. But the wind was still fair, and he would not turn an inch from his path. 'If God please,' he wrote, 'we shall know all in good time.' At present his sole business was to sail before the wind. Towards the end of

[1] Journal, ubi sup.: 'Tomaron los pilotos el Norte marcándolo, y hallaron que las agujas norouestaban una grañ cuarta, y temian los marineros, y estaban peñados y no decian da qué.'

the week calms occurred, which profoundly alarmed the crew. Fortunately their fears of never returning to Europe were allayed on the last day of the week by light contrary winds. Often hitherto had the sailors pondered dubiously on the continuity of the trade-wind, favourable though it was to the undertaking. But when this wind had blown them to the opposite shore, where was the wind that should blow them back again[1]?

Third week.

The breeze of Saturday was followed on Sunday by a heavy ocean swell. Here was a positive indication of forces other than the Trade-winds: and Columbus took care to point this out to his crew. Filled, as ever, with the belief that he was the chosen instrument of a divine undertaking, he thought upon Moses at the Red Sea, when the Lord caused the sea to go back by a strong wind all one night. Such a miracle had happened but twice, he wrote: once to Moses when delivering the Jews from captivity, and once to himself when carrying Christianity westwards to the Indies[2]. On Tuesday Columbus conferred with Martin Pinzon as to their position. Martin thought that they must have reached the longitude of the islands drawn on the chart of Toscanelli. Columbus was of the same opinion, but resolved to avoid the fatal folly of turning out of the course to seek them. At nightfall the clouds yielded one of those deceptive mirages which had so often deluded the Atlantic sailor. Martin Pinzon mounted on the poop of the Pinta, and cried out 'Land!' to the larboard. Something very like land did in fact appear in that quarter: the crews of all three vessels were unanimous in affirming it, nor could Columbus himself deny it. He ordered a hymn of praise to be added to the evening devotions, and the course for the night to be changed to the south-west. In the morning, the illusion

[1] Las Casas, ap. Navarrete, vol. i. p. 164: 'Dice aquí el Almirante "mucho me fue necessario este viento contrario, porque mi gente andaban muy estimulados que pensaban que no ventaban estos mares vientos para volver à España."'

[2] Id. p. 165: 'Dice aquí el Almirante "asi que muy necessario me fue la mar alta, que no pareció, salvo el tiempo de los judíos cuando salieron de Egipto contra Moysen que los sacaba de captiverio."'

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was gone: and Columbus altered his course to due west. As the sailors were still dissatisfied, Columbus, the more decisively to prove the illusion, and the folly of varying from a due west course, altered his course in the afternoon again to the south-west. At nightfall the westward course was resumed.

Fourth week.

The sea was still calm, and the wind fair. The flight of sea birds, the drifting of the floating fucus by day, and the nightly motion of the stars, were closely watched by Columbus. On Tuesday in this week he observed that the fucus began to change its direction and to drift from east to west. 'Thanks be to God for this,' he inscribed in his log: for he was waxing anxious as to the endurance and fidelity of his crew. Every one believed the birds and floating weed to indicate land near. Columbus encouraged this belief, but steadily refused to alter his course. On Saturday evening Martin Pinzon pressed him to turn to the south. If we do so, said the Admiral, we shall be longer in reaching the continent. Let us make the main-land first: it will be easy enough to make the islands afterwards[1]. To this sturdy perseverance in his original plan the ultimate triumph of Columbus is attributable. Had he turned aside to the right or to the left, the fate of his expedition would have been sealed, and his name would have perished, even as the names of those who had swept the sea in search of St. Brandan's and Antilia had perished. But Columbus resolutely followed the setting sun: and he would certainly have gone straight on, even had the New World been twice its actual distance from the Old. Had the continent of America not existed, he would probably have persevered until he reached the shores of Asia.

Fifth week.

The Niña, as it fell out, was ahead: and on Sunday morning she signalled that land was in sight. The expectation proved false. At sunset on this day, convinced by observing the steady flight of birds to the south-west, Columbus consented to a change of course. He was now, in fact, in the longitude of the Bermudas, and in latitude

[1] Navarrete, vol. i. p. 169.

about half-way between that group and the Virgin Islands. The change of course, as it happened, enabled him to make land the sooner. Thus they sailed on during Monday, Tuesday, and Wednesday. On the latter day, three days' trial having been given to the new course, the crew renewed their murmurings. West or south-west, it might seem, was all one: there were no signs of land. Columbus addressed them mildly but firmly. He told them of the profits and advantages which their impending success could not fail to bring, and concluded by saying that he had come thither with a resolution to find the Indies, and that with God's help he meant to go on until they were found. On Thursday, more certain signs of land appeared. The sea was higher than it had hitherto been. A green branch was seen from the Santa Maria: from the Pinta, a reed, a wooden club, and a small stick apparently carved with an iron instrument: from the Niña, a branch of the dog-rose brier, covered with flowers. There could now be little doubt that land was near. At sunset, Columbus again changed his course to the west, and kept an anxious look-out. The sun set, and still Columbus was watching from the poop of the Santa Maria. When darkness had overspread the western horizon, he still gazed eagerly onwards. At about ten o'clock he fancied that he saw a dim light twinkling among the stars on the horizon. He pointed it out to a Spanish gentleman who was talking with him, and both agreed that it was a light, apparently rising and falling, as of some one carrying a candle. After the usual evening devotions, he told the crew that land was near, and ordered a careful look-out to be kept. Besides the royal pension, he promised a silk doublet to the sailor who should first descry land. At two o'clock land was signalled by the Pinta, ever in advance: and it became clearly visible at the same time on board the other vessels. Columbus now ordered all the vessels to lie to, and waited impatiently for the day[1].

Columbus lands.

On the morning of Friday, the 12th of October, 1492, Columbus and the two Pinzons landed in the boats of their

[1] Navarrete, vol. i p. 172.

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respective vessels. Columbus put on for the first time his official dress of scarlet silk, copied from that of the High Admiral of Castile. The royal standard of Spain was in his left hand, and a drawn sword in his right. The Pinzons, not to be behind in the show, carried with them their ships' flags. Calling to witness those who landed with him, Columbus took possession of the island in feudal form, in the name of the King and Queen his masters[1]. A crowd of the naked inhabitants had thronged to the shore to see the strange sight. Their demeanour being friendly, Columbus distributed among them some of the trifles usually carried by the Portuguese for barter with the negroes, such as red caps, glass beads, and hawks' bells. The natives offered them in exchange birds of gay plumage, balls of cotton yarn, and wooden assagays. Some of them wore slight golden ornaments: but a less experienced eye than that of Columbus would soon have discovered that the riches of the Indies must be sought elsewhere. 'They were a good-natured people,' he says, 'but absolutely naked and poverty-stricken.' The only living creatures visible on the island, except naked men and women, were parrots. The natives readily exchanged their golden ornaments for hawks' bells and glass beads, and intimated by signs that gold was to be procured in greater abundance on others of the numerous islands which were visible on the horizon.

Land-fall of Columbus.

The land to which chance had directed the Spanish squadron was the now deserted island of Mariguana in the Bahama group, then known by the name of Guanahani[2]. It is a low ridge of land a few miles in breadth, covered

[1] Without these formalities the title of Columbus to his Donship and Admiralcy might have been challenged as invalid.

[2] The more fertile and populous Cat-island, or San Salvador, long enjoyed the reputation of being the land first reached by Columbus. Humboldt and Irving, the latter from unwillingness to disturb 'the ancient land-marks,' allowed the claim. The improved chartography of more recent times has proved it to be untenable. Navarrete supposed him to have reached one of the Turks: Muñoz and Captain Becher, Watling Island. The credit of indicating Mariguana as the place of the land-fall is due to F. A. von Varnhagen, La verdadera Guanahani de Colon, Santiago, 1864: Sull' importanza d'un manuscritto inedito della biblioteca imperiale de Vienna, &c., Vienna, 1869. See also Ausland, 1864, p. 564.

with impenetrable woods, and affording neither proof nor promise of wealth. Taking with him a few of the natives, Columbus speedily quitted it, and once more steered west, in search of something better corresponding to the glowing descriptions of Marco Polo. The ample notes in his journal make it easy to follow him on the chart. Passing the Planas, he reached Acklin and Crooked Islands, rounding the north coast of which he reached Long Island. Sailing north-west with a favourable wind, he reached its north-westernmost point, where other islands to the north-west were clearly visible. But the natives whom he had on board now made him understand by signs that if gold was the object of his search he must change his course. They pointed with one accord to the South. Columbus therefore reversed his course, sailed back along the coast of Long Island, and again reached Crooked Island, where he anchored. By this time the signs of the natives were better understood. Columbus now learned that to the southward there lay a vast island called CUBA, where there were many great ships, gold, and spices. This island, he thought, could be none other than the Cipango of Marco Polo. The natives further made him understand that near Cuba was another great island called BOHIO, and many smaller ones. Bohio, since so well known by the names of Hayti and Española, was a land of much gold: and Columbus joyfully concluded that he had undoubtedly reached the great archipelago of the East. His future course, he wrote, would be determined by the success which attended his search for gold, pearls, and spices. But in however great abundance these treasures might be found, he was resolved not to forego his visit to the mainland, and his mission to the great potentate of Cathay. 'I am determined,' he wrote, 'to go to the continent and the city of Quinsay, and to give the letters of your Highnesses to the Grand Khan, and to ask for a reply, and to come back with it [1].'

[1] Journal, ap. Navarrete, vol. i. p. 189: 'Segun yo fallare recaudo de oro ó especería determinaré lo que he de facer. Mas todavía teugo determinado de ir á la tierra firme y á la ciudad de Quiñsay, y dar las cartas de vuestras Altezas al Gran Can, y pedir respuesta, y venir con ella.'

Book I. *Discovery.* The Quest of Gold.

The peculiar genius of Columbus never deserted him for an instant. Adherence to a single primary object, and total disregard of all secondary ones, had enabled him, as he supposed, to reach the Indies. He well knew that there was but one means of fixing and assuring his success. He must bring back to Spain, in the shape either of treasure or of merchantable goods, a cargo which would show a profit on the expenses of the expedition: and failing this, he must at any rate show a reasonable probability of such a profit in the future. His first object was therefore to secure some clear evidence of the treasures of the Indies, and to this end he at once devoted himself to the quest of gold. Columbus, as we have sufficiently seen, was not a man of original ideas. In the execution of his scheme he followed the example of the Portuguese in Africa: for the first object of these explorers was to discover sources of gold, and to erect forts to secure them. Besides the acquisition of gold, the Portuguese had long carried on from Guinea a profitable trade in slaves. Columbus probably from the first contemplated the same object: and when the yield of gold at length fell below his expectations, he resorted to this infamous traffic as the main support of his undertaking. As yet, however, his expectations were unbounded. Wherever he had cruised, he had found golden ornaments in use: and he was now on his way to the two great islands where gold was to be had in abundance. On the 24th of October, twelve days after his landing at Mariguana, Columbus tripped his anchors at midnight off Crooked Island, and sailed west-south-west, following the signs made by the natives on board, for the island of Cuba. In four days he had made the broad and secure harbour of Nipa, near the eastern end of the island. Finding no signs of gold, he speedily quitted it, and cruized westward along the northern shore until he was stopped by the shallows off Cape Palmas, or about one-fourth of the length of the island. Before reaching this cape, he had entered the fine harbour of Nuevitas. Hither he now returned: and the Cuban natives flocked to his ships. Finding no promise of gold, and assured by them of the vast extent of the country,

Columbus now concluded that Cuba could not be Cipango, but was no other than the mainland of Asia. Cipango might possibly be the rich island which lay to the east of Cuba, and where the natives of Cuba assured him nuggets of gold were to be picked up in abundance by torch-light on the sands of the shore.

Mission to the Grand Khan.—Departure for Hayti.

The Indians of Nuevitas spoke of a great town at no considerable distance: and Columbus, concluding that it could be no other than Quinsay, the capital of the Grand Khan, at once despatched thither an embassy charged with the royal letter to that potentate. The embassy consisted of two Spaniards, one of them learned in the Eastern tongues, together with an Indian of Mariguana, and an Indian of Cuba, who undertook to guide them. On the fourth day of their absence they returned; for the great town proved to be a mere collection of fifty Indian huts[1]. Columbus meanwhile had been busily enquiring for gold. All the information he procured pointed to the great island of Hayti, which lay to the east of Cuba, and which Columbus understood the natives to name Bohio[2] or Babeque. Gold is in fact yielded in minute quantities by all the alluvial tracts of this island: and it contains mines, which were workable at a profit as long as the natives existed to work them. Since the extermination of the natives they have been deserted. On the return of his messengers to the Grand Khan, Columbus gave orders to trip anchor, and sail for this island. The course was against wind and current, and the caravels had to sail on a bowline, making their easting by means of a great circuit to the north. Taking advantage of the position, the fast-sailing Pinta was soon out of sight, and Columbus saw nothing of her for six weeks. He fell in with her after sailing for home: and the event proved that Martin Pinzon had resolved to play him false, and to forestall the fruits of the Discovery[3].

[1] It was on this journey that the native practice of inhaling the smoke of rolled tobacco-leaves was first witnessed by Europeans.

[2] Bohio is explained by Las Casas to mean a group of huts. The name Canada seems to have had the same meaning, and to have been similarly mistaken by the first visitors for a proper name.

[3] Pinzon again deserted him in the Atlantic, hoping to be first to carry the

Book I. *Discovery.* Columbus wrecked off Hayti.—Returns to Spain.

On bearing once more to the south, to turn the eastern end of Cuba, Columbus could not resist the temptation of entering more than one of its commodious harbours. The fertility of the soil, the healthiness and moderate temperature of the air, and the abundance of good water, were noted by him as an advantageous contrast to the Portuguese possession of Guinea. The simple inhabitants, he wrote, would readily be converted to Christianity. A fortified city, he thought, should be built in the bay of Nuevitas: and the profits and benefits which would certainly accrue both to the Indians and to Spain were incalculable. But for the present the quest of gold imperiously hurried him away. Columbus crossed the Windward Passage and entered the little harbour of Nicolo Mole, at the western extremity of Hayti, on the 6th of December, or nearly two months after reaching the New World. Thence he proceeded eastward, and at length anchored in the spacious and beautiful harbour of L'Acul Bay. The friendly natives flocked to meet him: and the island did not belie its report. Small quantities of gold were readily produced, and more was confidently promised. The demeanour of the cacique of the district, by name Guacanagari, promised good faith and kindliness; and Columbus quitted L'Acul Bay with regret. For the quest of gold hurried him on. His hopes now ran higher than ever, for in this place intelligence had been gained of mines of gold in a mountainous region called Cibao, a name in which Columbus detected an analogy with the Cipango of Marco Polo. But soon after quitting his anchorage, intending to coast onwards to the East, a disaster happened which put a forced end to his cruise. The squadron, as we have seen, had been already reduced to two vessels by the desertion of the Pinta. During the night of Christmas Eve, while Columbus was asleep in his cabin, the Santa Maria struck on the sands, and became a wreck. His resolution was soon taken. Vincent Pinzon, in the Pinta, was exploring and collecting gold on his own account, intending to forestall the Discoverer in announcing

news to the Spanish Court. He only reached the north of Spain after Columbus had put into Palos.

the results of the expedition at the Spanish Court. The Santa Maria was a hopeless wreck, and the Niña was incapable of carrying back both crews. Columbus resolved on at once returning to Spain in the Niña, leaving the crew of the Santa Maria in Hayti. Here they would be under the protection of the friendly cacique. The means of subsistence were abundant. A slightly constructed fort would suffice to protect them from possible molestation. During the absence of Columbus they might pursue the enquiry for gold, and possibly collect a considerable quantity of the precious metal against his return. A wooden fort was constructed out of the wreck of the Santa Maria for their reception, near the present city of Cap Haytien, and in memory of the day of the wreck it was named La Navidad. It was, however, speedily destroyed. No sooner was Columbus gone, than those whom he had left behind lost all self-control, and provoked the natives to a struggle which ended in the slaughter of the Europeans. In the mean time, early in the new year Columbus sailed for Spain in the Niña. After a perilous voyage of six weeks he made the Azores: and on the 4th of March reached Europe. Compelled by stress of weather to put into the port of Lisbon, his adventures were there related to the monarch who had declined his first proposals. A few days afterwards he entered the port of Palos, and was soon on his way to the Court at Barcelona. He entered the city in triumph, parading before him the Indians, the strange animals and plants, and above all, the gold, which he had brought home.

Correspondence of the lands discovered with current descriptions of Asia.

Columbus fondly believed that his task was accomplished. He believed that in Cuba he had reached the Asiatic continent, in Hayti the rich isle of Cipango, and in the rest of the islands the famed isles of the Indian archipelago. The conception of a fourth part of the globe was wholly foreign to his mind. And though, as the reader is aware, such a conception was common enough in connexion with the unvisited hemisphere to the south of the equator, it was quite unknown in connexion with the northern hemisphere. Apart from poetry and philosophy, the triple division of

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the earth's surface was thought to be as exhaustive as the triple dimension of space. It was a favourite commonplace of the Schools. Whatever land is not Africa nor Europe, is Asia. The lands beyond the Atlantic are neither Africa nor Europe; therefore they are Asia[1]. Nor can it be said that Columbus judged rashly in supposing himself to have reached the Indian archipelago. He was in fact at its precise antipodes, and separated from it by half the earth's circumference. The hemisphere intruded between. But much that met his observation confirmed him in the belief that his scheme was accomplished. He found himself in an apparently numerous group of islands, such as Marco Polo had described, lying in the latitude of Cathay. They were populous and fertile: and Columbus accepted population and fertility as promises of wealth. He met with gold, pearls, various strange plants including a sort of spice, the famous Brazil or dyeing wood, and lastly, he had gained unquestionable testimony of the existence of wild human beings, who ate the flesh of their fellow-men. All this corresponded to Marco's description. But one element was wanting, the rich civilisation of Cathay and Mangi. Accustomed to see his projects tardily developed, Columbus confidently awaited the time when these countries would be reached. Meanwhile, it was his policy to assure his success by carrying back to Europe ample proofs of its reality. Even when the truth became known, it was long before this belief was abandoned. The discovery of the wealth of Mexico revived it: and forty years afterwards it was maintained by cosmographers that the rich city which Cortes had spoiled could be no other than the famed Quinsay of Marco Polo[2].

The American Continent.

The two great and fertile islands of Cuba and Hayti, which he had visited, were in fact the centre of a great

[1] R. Willes, apud Hakluyt, vol. iii. p. 25: '. . . that old conclusion of the Schools, Quicquid praeter Africam et Europam est Asia est.'

[2] Schöner, 1533. Columbus made a very accurate dead-reckoning, and judged his distance from Europe correctly within a few leagues. If he had reached Asia, it resulted that either the sphere was very much smaller, or Asia very much larger, than was commonly believed: and Columbus leaned to the former explanation.

geographical system, the existence of which had hitherto been unknown. These two islands were in themselves of no mean significance: for, taken together, they were nearly equal in extent to half the dominions of Ferdinand and Isabella in the Spanish peninsula. But they were merely the beginning of wonders. Had Columbus sailed southward, following the Windward Passage, which divides them, he would have entered the Caribbean Sea, a quasi-Mediterranean sea, bounded on the south and west by the mass of a new continent, on the other sides by a series of islands, and almost equal in extent to the great Mediterranean Sea of Europe. Had he pursued his voyage to the westward along the coast of Cuba, he would have entered the Gulf of Mexico, another quasi-Mediterranean sea, bounded on three sides by the same continental mass, and about equal in extent to the Black Sea and the Baltic Sea put together. A few degrees to the north and south of the regions which he had reached, the waters of these two quasi-Mediterranean seas mingled with the general mass of the Atlantic. The question of the breadth of that mighty ocean, the problem of so many ages, was thus on the eve of solution. The Atlantic was bounded on the west by a sinuous shore of enormous length. Far into this sinuous shore there penetrated these two quasi-Mediterranean marine basins. To the North Pole and to the South Pole this great shore stretched away, traversing latitudes more remote from the equator than any known latitudes in the Old World. The length of the Atlantic shore of America may be roughly described as about equal to the earth's circumference. Such was the field of exploration which the enterprise of Columbus had opened to the maritime adventurer. But the Columbian discovery had dealt a death-blow to the Columbian hypothesis. Stretching from the Arctic almost to the Antarctic circle, this vast land presented an impenetrable barrier to further westward exploration. Discoverers coasted wearily along this barrier in search of an outlet. Nearly thirty years were to elapse before it was passed on the south: and the passage of it on the north, after centuries of fruitless endeavour, was at length to be proved impossible. The

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continent, of which this sinuous barrier was the sea-coast, was about five times the size of Europe. It possessed a fertile soil, and a climate favourable to man and those domestic animals through whom he wins the dominion of nature. America has less in proportion of stony steppes and arid deserts than other tracts of the globe. Within the tropics its soil quickly mounts to an elevation where animal and vegetable life is stimulated by temperate airs. A continuous range of mountains, unparalleled in the Old World, forms an enormous back-bone to the American continent, and feeds the greatest rivers which the world contains. These rivers are to the New World what its inland seas are to Europe. The Saint Lawrence, with its great chain of lakes, the Mississippi, the Amazon, and the Plate River, with their tributaries, constitute each a great natural system of inland navigation and provide means for reaching every part of the continent. As a food-producing region America may be said to have no rival on the globe. The soil yields abundantly everything of use or luxury to man; and all races of man, white, black, and yellow, may multiply and thrive in its various climates, though not without undergoing those race-transformations which emigrant man can never escape.

Aspect of Nature in the New World.

But the attractive aspect which the New World assumes in the eye of the modern observer has been of slow formation. It may almost be said to be the growth of the present century. The European of the age of Columbus and Cortes was only drawn to the New World by the overmastering lusts of his time; the lust of gold, the lust of territorial conquest, and the lust of spiritual supremacy. He never contemplated it as a field of human progress. It even repelled him by its vastness, its solitude, its desolation. In the climates of the New World, while vegetable nature rioted in a profusion unknown in the Old, the mysterious cause which quickens the earth into animal life seemed checked and paralysed, and incapable of working out its greatest and noblest productions. The mammalia found in the New World were few in number, feeble in vitality, and stunted in their growth, compared with those of the

Old. The lower forms of animal life, the ant, the bat, the toad, the serpent, and the lizard chiefly flourished on its soil; and the teeming forces of nature seemed to be absorbed by that which was noxious and unprofitable. All indicated a separation between the two worlds which had existed during many ages: and it seemed to be the will of Nature that this separation should subsist. The striking contrasts exhibited by animate and inanimate nature in the Old and New Worlds respectively have suggested the conjecture that the latter emerged from the ocean at a later date than the former. In the eye of the poetic philosopher Darwin, America was in every sense of the phrase the latest birth of time. Its lofty mountains, vast elevated plateaux, and comparatively small extent of alluvial plains, indicated a briefer exposure to the annual wear of the elements. Life and evolution were checked by the peculiar climate which this extent of mountain and plateau induced. The inconsiderable size and strength of its fauna, and the low grade of civilisation and intelligence among its inhabitants, were marks of physical immaturity, accountable for by a comparatively recent date of existence[1]. So striking a conception fixed the attention of men of science, and quickly led to its own refutation. The geology of the New World forbids it. In both worlds the same strata are found, and in the same succession: the Andes are as old as the Alps[2]. And geology even enables us to reconstruct the features of a time when no such contrast existed between the fauna of the two worlds. The fossil elephant, ox, and horse are alike common to them. In prehistoric times the continent of America swarmed with animals, now long since extinct, as monstrous as those which roamed over the southern parts of Africa and the huge wastes of Siberia: and the cosmical changes which put an end to their existence, and interrupted the continuity of animal life in the two hemispheres, are still

[1] Darwin, Zoonomia (2nd ed., 1796), vol. i. p. 512. The theory is borrowed from Buffon, who was especially struck by the inferior vitality of American animals. Professor Guyot has supported the same doctrine in our own times. (The Earth and Man. Boston; 1850.)

[2] Humboldt, Vues des Cordillères, Introduction, p. 18.

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involved in the mists of conjecture. All that seems certain is that those changes affected the whole surface of the globe simultaneously. Not only in America, but everywhere else, nature seems to have lost the power of producing those enormous species which marked the earliest period of animal life. The giant vicuña and guanaco have disappeared in Peru and Patagonia, as the giant ox has disappeared from Europe, and the giant kangaroo from Australia[1].

Indigenous Race of the New World.

The new continent was in the possession of a race whose kindred still possessed the greater part of Asia, and had once possessed the whole of both Asia and Europe. The history of the Turanian race remounts to that distant period when Caucasian man had not emerged from his mountain birthplace. It would seem that there once was an æra when the African Negro and the Asiatic Tartar or Turanian divided the Old World between them. The Negro race was not confined to the continent of Africa: it occupied the southern parts of Asia, the Asiatic Archipelago, and the great continental island of Australia. Over the rest of the Old World the Turanian race roamed at will. Gradually increasing and multiplying in the milder climate of Central Asia, it waxed aggressive, and ultimately dispossessed the Negro of all but his African birthplace. It is possible to reconstruct the ethnological features of this second æra, in which Caucasian man was still in obscurity, and Turanian man possessed all Asia, including its great western peninsula called Europe. The skulls of the close of the geological quaternary period, which have been found in France, in England, and in Belgium, are of the Turanian type. The Basques in the West, the Finns and Esthonians in the North, even now exist as relics of the Turanians

[1] 'If Buffon,' says Mr. Charles Darwin, in his discussion of the disappearance of the larger species of animals in each quarter of the globe, 'had known of those gigantic armadilloes, llamas, great rodents, and lost pachydermata, he would have said with a greater semblance of truth that the creative force in America had lost its vigour, rather than that it had never possessed such powers.' Journal of Researches (in South America), p. 210. 'I doubt not,' writes the same author (p. 610), 'that the snow-clad heights of Chimborazo, Illimani, and Aconcagua have seen as many, and as strange forms of animals, pass by and become extinct, as ever did the Alpine pinnacles, or those loftiest ones of the Himalaya.'

of Europe; and the Turanian Rasenna of Etruria have disappeared within historical times. Equally within historical times, Turanian races have been dispossessed of Central and Eastern Europe by the inroads of Celtic, Teutonic, and Slavonic tribes. In the time of Herodotus they held the greater part of the European continent. In Siberia, Tartary, India and China, they still hold the greater part of Asia. The process of wresting the world from the Turanian race has been going on ever since the Caucasian race, in its Aryan, Semitic, and Hamitic divisions, appeared on the scene. India, where Turanians still dwell in millions, under the names of Tamuls, Telegus, and Carnates, passed under an Aryan domination at a comparatively early period. The Turanian civilisation of Chaldæa and Susiana was overrun by the Semites of Assyria. The great Turanian kingdom of Media was conquered by the Aryan Persians. The oldest language committed to cuneiform writing is a Turanian language; and that system of writing, which in Semitic hands became the basis of modern alphabets, is of Turanian origin. Over these early Tartar civilisations Caucasian man had prevailed at the dawn of history. The conquest of Central Asia by the Russians, which is going on at this day, is a continuation of the same process: and precisely the same process has been going on in America ever since Caucasian man reached it. The New World was peopled by the Turanian race. And no sooner had the Caucasian arrived than the struggle which constitutes one of the greatest historical processes of the Old World was renewed in the New. The Turanians still possessed in the Old World a vaster inheritance than any rival race: in the New World they had no rivals until the fatal arrival of Caucasian man in the person of Columbus. Many thousands of years, in all probability, before the rise of Caucasian civilisation in the plains of the Nile and the Euphrates, the wild hordes who swept from one end to the other of Europe and Asia had found a way across Behring's Straits, and poured in an incessant stream over the American continent. That a very long period had elapsed since the original migrations when Europeans

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first became acquainted with the American aborigines, is rendered certain by a comparison of the languages and physique of the various aboriginal tribes among themselves, and with their kindred in Asia: and the same conclusion is indicated by the events which are alleged to have taken place on American soil before the white man reached it[1].

Supposed semi-civilised Races of 'Mound-builders.'

More than one form of social organisation, having more or less claim to the title of civilisation, had already appeared on the American continent; and among these has usually been reckoned that of the so-called 'Mound-builders.' Over a great part of North America, and especially the basin of the Mississippi and its tributaries, are scattered the remains of huge rectilinear and circular earthworks. In connexion with them are found the burial-places of a race of men acquainted with many necessary arts of life, and with the use of copper. Stones sculptured with animal figures and a species of picture-writing, open and raised spaces, once apparently the sites of temples and of other large buildings, and clearings of vast extent which have at one time been subjected to a husbandry of no rude character, and connected by broad high-roads, mark the settlements of the 'Mound-builders,' and have been thought to indicate the existence on the soil of the United States of a great semi-civilised people. The great earth-works, which have procured this race its distinctive name, are often overspread by the growth of a forest apparently primitive. All memory of them had long passed away when the European settlers began to contest the soil of what is now the United States with the mere savages whom they found in possession of it. Such, at least, is the view which has been usually held by American antiquaries. A keener criticism discovers the 'Mound-builders' to be an excusable historical illusion,

[1] The Turanian origin of the American aborigines was first maintained by the English antiquary Edward Brerewood. The only theory capable of seriously competing with it is that of Morton and Agassiz, which supposes a separate creation or evolution of the human species on the soil of the New World. Even were such a theory established, it would still be demonstrable that the conditions of such creation or evolution were such that very similar human types were produced on both continents in the person of the Red Indian and the Tartar.

due partly to an imperfect Indian ethnology, and partly to the desire to discover on North American soil some analogue to the civilisations of Peru and Mexico. The mysterious 'Mound-builders' were simply the ancestors of the Indians of the West[1]. Every relic of their supposed civilisation corresponds with something that can be clearly traced to ordinary Indian hands: and traditions have here and there survived attributing the great earthworks of the Ohio to the red man's ancestors. These traditions ascribe their construction to an age not very remote, when those ancestors were more numerous and prosperous than in historical times, and when they were liable to attack in the course of southward migrations which were taking place on the Pacific side of the continent. The history of the 'Mound-builders' thus merges in the general story of the American aborigines[2].

Mexican and Peruvian Civilisation.

This theory of an ancient and extinct civilisation, accounting for the historical relics of the so-called 'Mound-builders,' was based on the analogy of two peculiar forms of social organisation which the Spanish conquerors had found and destroyed, the one in the valley of Mexico in North America, the other in Quito and Cuzco in South America. It was hardly to be expected that the Spanish invaders should determine with critical exactness the degree of civilisation which had been attained under the governments which they overthrew. Filled with the rude romance of their age, dazzled by the golden treasure they had gained, and bewildered by the vast extent of country which the overthrow of the Aztec and the Inca governments nominally added to the dominions of the Spanish crown, they described themselves as the conquerors of mighty and

[1] I use the term 'West' here and elsewhere in its historical sense of the basin of the Mississippi and its tributaries, lying across the Alleghany mountains to the *west* of the thirteen original English settlements.

[2] For the theory of the 'Mound-builders' as a great semi-civilised race, long extinct, see especially Warden, Recherches sur les Antiquités de l'Amérique, Paris, 1834, and the monographs of Squier and Davis, and Haven, in the 1st, 2nd, and 8th vols. of Smithsonian Contributions to Knowledge, Washington, 1856. The question is completely settled in accordance with the view indicated in the text, which is also that of Schoolcraft and M°Culloh, by Waitz, Anthropologie der Naturvölker, vol. iii. pp. 56–77.

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civilised nations: and they strained their memory and their imagination to the utmost for the purpose of justifying their claim in the eyes of their countrymen. No flattery is too gross for national vanity. Spanish historians accepted with undoubting faith the glowing accounts which were transmitted to them, and believed that Spain had overthrown two empires as mighty as the world had ever seen. From Spain these historical romances rapidly spread over Europe: and from Europe they in time found their way back to America. Rational history unwillingly reduces the wondrous exploits of Cortes and Pizarro, and the mighty governments which they overthrew, to a comparatively humble level: and in the science of man which the present century has created the subjects of Montezuma and Atabalipa scarcely stand out above the general level of the American natives. A detailed criticism of these once celebrated conquests belongs to a subsequent part of the present work. For the present, I will merely repeat the conclusion of Robertson and Macaulay, that neither the Mexicans nor the Peruvians are entitled to rank with those nations which merit the name of civilised [1], and that in the general view of the New World they merge in the mass of the Indian aborigines.

Race-Variations among the natives.

The Tartar race-type, with its dull physiognomy, reddish-brown skin, beardless chin, agglutinative speech, and cold and impassive temperament, is common to all the American natives. But the main type, as happens universally, had undergone countless local variations. In stature, in physical force, in facial conformation, and to some extent even in colour, the aborigines exhibited strange contrasts. Here and there, where the surrounding conditions were favourable, a noble and graceful type of

[1] History of America, book vii. Macaulay (Essay on Clive) describes the Mexicans as 'savages who had no letters, who were ignorant of the use of metals, who had not broken in a single animal to labour, who wielded no better weapons than those which could be made out of sticks, flints, and fish-bones, who regarded a horse-soldier as a monster, half man and half beast, who took a harquebusier for a sorcerer, able to scatter the thunder and lightning of the skies.' These few lines are worth all the ponderous romances which have been written on Mexican civilisation. The Peruvians were even lower in the scale of humanity.

man was produced. Turanian man reached his perfect development in Kentucky and Virginia, as Aryan man did in the Hellenic and Italian peninsulas[1]. At no great distance from these higher types, manifestly inferior ones were to be found. In language the contrasts are no less striking. Side by side, in many parts, there still exist tribes speaking languages without any apparent resemblance[2]. The explanation of this is not to be sought in the hypothesis that such tribes migrated from different and distant parts of Asia, and possibly at different times. It rather indicates prolonged isolation on American soil: and it is quite possible that in the absence of literature, traditional or written, the entire surface of grammar and vocabulary has in the course of many centuries been shifted, though the substantive material and the agglutinative form remain the same[3]. In the social state of the different tribes similar contrasts were observable. The Mexicans and Peruvians, though immersed in a gross barbarism, dwelt in cities, and lived in a state which was capable of being exaggerated into the semblance of civilisation. Elsewhere, as in the great basin of the Mississippi, and in some parts of the Atlantic coast, the natives cultivated the soil with some method, and had permanent villages. But in by far the greater part of the New World man was yet in the hunter stage. Articulate speech, the knowledge of fire and the use of rude implements of stone and wood, but poorly distinguished him from the lower

[1] Kant (Verm. Schriften, vol. ii. p. 615) first pointed out the gradual disappearance, among the tribes to the south, of the distinctive Kalmuck features which prevail in the extreme N. W. of the continent, and the formation of a higher facial type.

[2] Among the thirty-five languages of Mexico, for example, the Mexican, Otomi, Tarascan, Mayan, and Miztec seem to have no words whatever in common: and the Otomi differs from all the others in being not agglutinative, but monosyllabic.

[3] 'The Indian mind,' says Bunsen, Philosophy of Universal History, vol. ii. p 115, 'has not only worked in one type, but with one material, and that a Turanian one.' Objections have been taken to the explanation given in the text on the ground that within historical times the Indian tribes have been extremely conservative in the matter of language, and that the vocabularies constructed by the earliest travellers are still found correct. But this may be accounted for by the altered circumstances since the Discovery.

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mammals. The human brute roamed from plain to plain, finding his business and his pleasure alike in war, in the chase, in the reproduction of his species, and in some uncouth forms of superstition.

The Savage of America.

The Discovery of America first introduced the perfect savage to the knowledge of Europe. Hitherto the 'wild man' had been a legendary and heraldic animal, like the griffin and the phœnix. Every shore which European seamen frequented, except perhaps the still unconquered islands of the Canary group, presented some semblance of civilised life. Those inner parts of Africa, where the religion and policy of Mahomet had not penetrated, were scarcely known: and though Mandeville and Marco Polo had asserted that there existed in the remote East races of men who devoured the flesh of their fellow-men, the tale was as little credited as similar tales in Homer and Herodotus were credited by the ancient world. The Anthropophagus, or man-eating man, was as little within European experience as the Cyclops. The voyage of Columbus made him as familiar in Europe as the Negro or the Moor: and the Indian name Carib or Caribbee in its modified shape of 'Cannibal' has continued in use to the present day as the denomination of the savage who feasts upon human flesh. This revolting practice, prevalent among a few tribes, lent to the New World a dark and odious colouring, which proved hard to efface. Little more than a century ago, the entire continent was conceived as peopled by numerous groups of savage races, differing little in manners, and universally known as Americans[1]. Occasionally a divine or philosopher described their indolence, drunkenness, and ferocity: sometimes they were contrasted, in the spirit of Tacitus, with the corrupt inhabitants of civilised Europe. Grave, hospitable, reverencing their ancestors, and yet passionately devoted to liberty, they supplied those who insisted on the decay of modern civilisation with an apt illustration. The know-

[1] The change in the use of the term 'Americans' dates from the independence of the United States, previously to which it invariably denoted the natives.

ledge Europe really possessed regarding them was but limited. Even Burke, who knew more of America than any of his contemporaries, believed them in the mass to be cannibals[1].

The Wild Races in the Antilles.

The islands which Columbus visited were divided between, two distinct races, who cherished a continuous hostility. This hostility was derived from the land of their origin. A branch of the South American Arawâks, under the names of Cibuneys, Gamatabeis, and Gangules, inhabited the four greater Antilles, except the eastern parts of Hayti. Ferocious savages, whom the Arawâks called Caribs, inhabited the rest of the islands. Both were alike immigrants from the opposite coast of South America[2], and had no doubt been drifted to the Antilles by the great equatorial current. On the coast of Guiana the original Arawâks and Caribs maintained a bloody rivalry. The Caribs were driving the Arawâks before them: and this warfare was continued by the island colonists. The warfare was no equal one. The insular Arawâks in Cuba and Hayti were in process of extermination by the Caribs when Columbus reached the islands. What the Caribs had begun, the Spaniards soon completed. In a few years they had absolutely destroyed the Arawâks of the Greater Antilles. They were never equal to the task of wresting the Lesser Antilles from their savage possessors. Even when Spanish domination in the Antilles had long been a thing of the past, the Caribs were able to defy those who had destroyed it, and during more than a century they maintained a desperate struggle in the West Indian islands against the English and French[3]. But they gradually dwindled. A military expedition destined to exterminate the few Caribs who subsisted in the island of St. Vincent

[1] Account of European Settlements in America, part ii.

[2] Waitz, Anthropologie der Naturvölker, vol. iv. pp. 348–360; Bryan Edwards, Hist. of the West Indies (ed. 1819), vol. i. p. 35. 'Carib' is the Arawak for 'fierce,' 'cruel.' The story given by Rochefort and Labat of the emigration of the Caribs from Florida is exploded. Some remnants of an older race existing in the interior of the greater Antilles were probably connected with the Mayas of Central America.

[3] See in several places the fifth volume of Labat, Nouveau Voyage (ed. 1742).

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was stayed in 1773, and their removal to some less valuable soil was decreed[1]. They were deported in a body, some years afterwards, to the desert island of Roatan, and at length removed to the main-land of Honduras. Here they began to increase and multiply: and at the present day their settlements extend from Belize on the west to Cape Gracias à Dios on the east. True to their ancient character, they are a strong and pushing race[2], and are still increasing their territory at the expense of the Mosquito natives, whose kinsmen their ancestors probably supplanted in the Windward Islands centuries before the discovery of Columbus.

The Pope's Bull.

The monarchs of Spain had no difficulty in procuring a formal grant of the new discoveries from the Pope, as the feudal over-lord of the whole globe. The tidings had produced great elation at the Court of Rome: for the ambition of the rulers of Western Christendom squared exactly with that of the Discoverer[3]. To preach the true faith in the East, and bring its myriad populations into the fold of the Church, was a conception worthy of an age of great ideas: and the reader is aware that it had been long in existence[4]. The discovery of Columbus seemed providentially designed to facilitate this object: and the only difficulty in confirming to the Spanish sovereigns the result of their enterprise arose from the grants which had been already made to the Portuguese. The explorations of these rival discoverers had already covered much of the ocean to the west of the island groups of the Atlantic: and to avoid future disputes the Pope invested the Spanish monarchs with all lands lying beyond a meridian line to be drawn a hundred leagues to the west of the Azores and the Cape Verde islands. This saving of Portuguese rights appeared to Emmanuel insufficient: and by the treaty of Tordesillas, ratified between the two Crowns on the 7th day of June, 1494, the meridian of demarcation was removed to a point three hundred and seventy leagues west of the

[1] The name of the philanthropist who stayed it should not be forgotten: it was Granville Sharp.

[2] H. H. Bancroft, Native Races of the Pacific States, vol. i. p. 713.

[3] Las Casas, Hist. de las Indias, vol. i. p. 483.

[4] See ante, p. 56.

Cape Verde islands. The result, as will presently be seen, was to put Portugal in possession of the enormous region now included in the empire of Brazil.

Second Voyage of Columbus.

The actual connexion of Columbus with American history scarcely extends beyond the facts hitherto recorded. Ambition, as we have seen, led him to ask as his reward the hereditary government of such countries as he might discover. This ambition was ill-founded. Capable as he was of any species of maritime undertaking, his proper employment would have been the developement of that great discovery which he had commenced. The grant of the hereditary Admiralcy diverted his energies to a barren field. To create a great Castilian government in this supposed Asiatic Archipelago, and to win dignity and wealth for himself and his family by an hereditary Viceroyalty, henceforth became his objects. Thus, like the virgin in the ancient fable, the genius of exploration stayed its course to grasp the golden prize which lay at its feet. The autumn of 1493 saw him depart from Cadiz, in command of a squadron of seventeen vessels, bent in the first place on completing the conquest of the island which had supplied him with gold. Twelve of these vessels conveyed emigrants and stores: for people of all ages and conditions, animated by the thirst for gold, flocked to join him, and in all there were above fifteen hundred souls on board. Twenty days, or less than half the time occupied in the first voyage, sufficed to bring him from Gomera to the New World: and on Sunday, the 3rd day of November, he sighted one of the mountainous isles of the Leeward group. His reckoning proved that he was far to the east of Española; and he therefore steered westwards, giving suitable names to the isles which he passed[1]. Coasting Porto Rico on the south, the expedition at length reached its destination.

[1] The first island sighted was named *Dominica*, from the day of its discovery. *Marigalante* was so named from Columbus' vessel: St. Mary of *Guadalupe*, from a celebrated monastery in the Spanish mountains of that name: *Montserrat*, from another Spanish mountain range: St. Mary of *Antigua*, from another Spanish monastery: *St. Martin*, from the day of discovery: the largest of a group apparently countless, St. Ursula, and the rest the Eleven Thousand *Virgins*, now called the Virgin islands.

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Columbus was not discouraged by finding that those whom he had left in Española the previous year had perished: and the foundation of the first European settlement in the New World was forthwith commenced. Choosing an apparently favourable site, he laid the foundations of a town to be called Isabella, in honour of the Castilian queen. This place, which was within easy reach of the mines of Cibao, the central sierra of Hayti, was destined to be the great *entrepôt* of Spain and the Indies. The plan of a large town was traced out, including a church, a government warehouse, and an admiral's residence. Houses were begun and plots of ground cleared for cultivation. But the prospect was soon overclouded. The change of climate, added to the labours and discomforts of the situation, soon told upon the health of the immigrants. The Admiral himself fell sick: and three months elapsed before he was able to visit the auriferous mountains of Cibao[1], where his energetic lieutenant Hojeda had meanwhile been exploring. Here he constructed a slight fortification, the outline of which may yet be traced in the dense vegetation of the forest. On returning to Isabella he found his distressed colony almost in a state of revolt. The emigrants, many of whom were persons of wealth and distinction, had expected something totally different from the rude realities of life in an embryo colony. When the ships which transported them had returned to Spain, when their supplies failed, when disease attacked them, and gold was only found to be procurable in inconsiderable quantities, their spirits flagged, and they bitterly reproached the projector of the enterprise. Columbus, on the other hand, with a seaman's love of discipline, enforced labour from all without distinction of rank, and had no sympathy for the disappointed gentlemen who had joined his enterprise. Few of them beheld Europe again. At the mouth of the little river Bahabonito, the traveller who seeks the historic scenes of Hayti still beholds the broken pillars of a church, and the mouldering remains of some stone buildings, which represent the once famous colony of Columbus. The ruins

[1] Cibao appears to have been the native word for 'mountain.'

might to all appearance be a relic of remote antiquity. When the colony was removed to a healthier site, the spectres of the noble Castilians who had perished there were reported still to haunt it. The superstitious Indians gradually forsook the surrounding clearings, and even the boar-hunter, scared by the sounds which proceeded from its walls, avoided its neighbourhood. Rank vegetation overspread the site, and at this day the ruins of Isabella appear to stand in the midst of a primæval forest.

Prosecution of Maritime Exploration—Summer of 1494.

Early in the summer Columbus resolved to seek relief from his difficult duties in the more congenial task of maritime exploration. He equipped three caravels, proposing to explore the southern shore of Cuba, and to prove beyond doubt that it was part of Asia. At some future time he intended to return to Europe by the west, along this supposed Asiatic shore and round the Cape of Good Hope: and his present cruise was intended to pave the way for this bold project by removing all doubts as to the identity of Cuba with the Asiatic continent. The discovery of the great island of Jamaica[1] at a few leagues' distance confirmed the belief: and for nearly a month Columbus followed the coast of Cuba in hopes of finding some signs of the civilisation of Cathay. He persevered, though everything observed on the land indicated mere barbarism, until want of provisions and the ill condition of the caravels compelled him, much against his will, to return. He had not obtained the proof of which he was in search: and in its place he had recourse to a singular expedient. Fully convinced that the Cuban shore was none other than the eastern extremity of Asia, and that civilised nations would be reached a few days' sail further on, he exacted a formal declaration to this effect from every pilot and sailor in the squadron, threatening severe penalties on those who should deny it[2]. He was in fact within three days' sail of the

[1] Jamaica (Land of Streams) is one of the few native Arawak names which have survived. One of the Windward islands had been already found to bear the same name.

[2] See the original Information, dated June 12, in Navarrete, vol. 2 (2nd ed.), p. 162. This singular document seems to indicate a panic fear on the part of Columbus lest it should come to be generally thought that he had after all

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westernmost point of the island, when he abandoned the tedious navigation of its coast, and stood to the south, intending to reach Isabella by sailing round Jamaica to the eastward. A surprise awaited him on reaching his colony wearied with his five months' cruise. His brother Bartholomew, whom he had not seen since they parted in Lisbon, the one to carry the famous project to England, the other to Spain, had arrived in Isabella. If anything could have saved the interests of the Discoverer, now in a perilous crisis, it would have been the aid and sympathy of his brother, whom he at once appointed his adelantado or lieutenant. But the difficulties in which his ambition had placed him were insurmountable, and Bartholomew only entered into his brother's fortunes to witness their decline and to share their collapse.

Collapse of the Columbian scheme.

But one result could be anticipated when the expectations to which the book of Marco Polo had given rise were compared with the realities which the voyages of Columbus disclosed. The Indies, so far as Columbus had made them known, consisted of a number of forest-clad islands, and part of a supposed continent, sparsely occupied by an utterly savage race. There was nothing to show in promise of the wealth of Quinsay and Cipango but the miserable community of Isabella. This distant establishment, together with the ships which plied between it and Europe, threatened to become a heavy permanent charge on the revenues of an impoverished Crown. The quantity of gold procured was inconsiderable: for the natives were unable to produce the small modicum of gold dust which was demanded from them as a poll-tax. Provoked to an unavailing resistance by the exactions of Columbus and his subordinates, they were captured in large numbers, and shipped to the market of Seville, there to be sold as slaves. Captive Negroes and Moors had from time immemorial been thus sold in the markets of Christian Europe. But even the Spanish conscience revolted from this treatment of the miserable aborigines of

only reached some strange and savage land instead of Eastern Asia. Such a belief might have caused his undertaking to be abandoned.

the Indies. The useless savages who were thus imported were moreover in no great demand in the market, and the Spaniards soon found it more profitable to employ them as slaves in the mines of their native land.

Action of the malcontents.

The breach between the obscure Genoese seaman and the Spanish gentlemen had rapidly widened. Columbus preserved the same dogged pertinacity which had sustained him when recommending his scheme to the European sovereigns, and when crossing the Atlantic in search of the Indies. The secret of his persistence was not precisely a masculine and rational faith in himself and his cause. It was part of his creed that nothing in his career was really a matter of fortune, and that he was in all things an instrument chosen by the Almighty for the accomplishment of his inscrutable designs. Those who found themselves doomed to a comfortless and perilous exile in the miserable colony of Isabella thought otherwise. Many of them fled from the restraints of the Discoverer's government, and roamed over the island in search of plunder. The natural consequence followed. The outraged natives were roused to resistance, and resolved to exterminate the invaders. In the midst of anarchy, danger and discontent, but one thing became certain to the leading Spaniards. Columbus, though a great seaman, was an incompetent governor. While Columbus was coasting Cuba, in the belief that he would soon reach the civilisation of the East, they resolved to return to Spain and acquaint the sovereigns with the true state of the case. Headed by a Franciscan monk named Buil or Boyle, they seized some vessels in the harbour and sailed for Europe.

Commission of Aguado—and return of Columbus.

The two years which had now elapsed since the return of Columbus to Hayti had added but little to the promise of the new discovery. More islands had indeed been discovered. He had gained a general idea of all the greater Antilles, and of the principal Carib islands from Dominica westwards: but this knowledge had led to no further results. The policy of Columbus was entirely concentrated in Española: and by the success or failure of the settlement there he had apparently determined to stand or fall,

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Meanwhile, the insurgent emigrants arrived in Europe. They urged the necessity of removing Columbus from the governorship. No facts on the other side were within the knowledge of the Castilian government: and in these circumstances, one Juan Aguado was despatched to examine and report. Columbus received him frankly: but having good reason to suspect that the report about to be made would prejudice him in the eyes of the sovereigns, Columbus resolved to leave his brother Bartholomew in his place at Isabella, and to return to Europe simultaneously with Aguado. He reached Europe once more in June, 1496, and lost no time in appearing before the sovereigns in person. His representations were up to a certain point successful. The Queen appeared to place confidence in his judgment, and even agreed to put at his disposal the means of extending his discoveries. As usual in Spain, a long and harassing delay took place. It was not until the summer of 1498 that Columbus sailed a third time for the New World. Anxious though he was to reach Isabella and to resume the government, the hope of attaining the demonstration on which his mind was set induced him to take a new and circuitous route. The islands hitherto reached were barely situated within the tropics. It was generally thought that the riches of the Indies lay nearer the equator: and Columbus now resolved to start from the Cape Verde islands, and to stand west and by south, in hopes of thus reaching the main-land of Cathay or Mangi.

Discovery of the American Continent.

While Columbus was impatiently waiting in Spain, the process of discovery had been renewed in other latitudes. As will shortly appear, another Genoese had in 1497 reached the shore of North America from Bristol. This incident had nothing to do with the plans of Columbus, who pursued his course in ignorance of the fact that a countryman of his own had thus in a certain sense forestalled him. The course selected by Columbus conducted him to the island of Trinidad. The renewal of his explorations, under the present favourable conditions, had stirred in his deeply religious mind a lively sense of gratitude to the Almighty:

and if we may credit his own words, he had resolved to bestow on the first land which should come in sight the sacred name of the Trinity. The result seemed to indicate a direct response to his piety. On the last day of July want of water obliged him to change his course and seek Dominica; and at noon a seaman of Huelva pointed out three mountain peaks, close together, on the horizon. 'It is certain,' he wrote, 'that the discovery of this island, in this spot, was a great miracle—as great as the discovery of my first voyage[1].' While coasting this fertile island on the south, Columbus for the first time set eyes on the great continent itself. It was the delta of the Orinoco: a low tract of land of indefinite extent, separated from Trinidad by a rapid and dangerous current. At the south-western angle of the island, he was but three leagues from this opposite shore, which he named Land of God's Grace (Tierra de Gracia). He would willingly have explored it: but he was anxious to reach Española, and therefore passed the Serpent's Mouth, as he designated the dangerous strait between the two capes, and bore away to the north, in which direction he was surprised to find a mountainous land stretching east and west, separated from the northern angle of Trinidad by another strait. Taking it for an island, he coasted along it in a westerly direction. It was, as he ascertained, a peninsula: the mountainous peninsula which terminates the northern cordillera of Venezuela. The natives called it Paria. They were of a higher type than Columbus had yet encountered: a tall and graceful race, clothed in cotton, cultivating the soil, and dwelling in houses. They wore ornaments of gold, and strings of pearls; and in answer to the eager enquiries of the Spaniards, they pointed to the north and west as the region whence these were procured. This was enough for Columbus, and he made haste to gain the northern side of the peninsula. He coasted as far as the cliffs of Margarita, and then made for Española.

[1] Las Casas, vol. ii. p. 229. The 'Trinity Hills,' as they are still called, rise above the scarped and inaccessible coast between Point de la Grande Calle and Casa Cruz Point. They are over 1600 feet high.

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The short cruise of Columbus in the Gulf of Paria, as the little inland sea between Trinidad and the continent came to be called, acquainted him with some phenomena which on comparison with previous observations confirmed him in the belief that he had reached the eastern shore of Asia. Upon this eastern shore, according to the popular geography of the middle ages, was situated that Terrestrial Paradise from which our first parents had been expelled, and which had never since been trodden by mortal feet. It was believed to be an enormous excrescence on the earth-sphere, buttressed all around by inaccessible mountains, from the midst whereof issued an ever-flowing fountain of fresh water, which fed the four great rivers of Asia. Venturesome men had sometimes attempted to approach it by these rivers: but had failed by reason of the volume and swiftness of the currents, many, says Mandeville, having died from weariness of rowing against the strong waves, and many having become blind and deaf from the noise of the water[1]. The lofty mountains of the peninsula of Paria, the freshness of the water in the gulf, produced by the great volume of the Orinoco, and the strife and rapidity of the waters in the two straits, resulting from the conflicting action of the great equatorial current and of the tides, forcibly reminded Columbus of the description in his favourite author Mandeville. He believed himself to be close to the earthly Paradise: and he was strengthened in this belief by a general comparison of the present region of his discoveries with the region of Sierra Leone, the only other land known to him lying in the same latitude. He compared the intolerable heat, the adust and barren shores, the tempestuous and uncertain skies, and the black inhabitants of the latter, with the mild airs, the peaceful heavens, the fresh and garden-like aspect, and the graceful natives of the coast of Paria; and he explained the contrast by supposing that this portion of the surface of the earth-sphere was considerably elevated above the normal level. The great excrescence or mound of Paradise, he thought, must extend even to the sea; and the earth was not a

[1] Mandeville, chap. xxx.

perfect sphere, but approached the shape of a pear. He accounted in this way for the unusual phenomena which he had remarked in navigating the ocean from about a hundred leagues to the west of the Azores: the nor'westing of the needle, the uncertain altitude of the pole, the gulf-weed, and the extraordinary mildness of the temperature[1]. A rapid examination of the northern coast of Paria, in the course of which he sighted the islands of Margarita and Cubagua, confirmed him in his views. He designated this coast TERRA FIRMA, as being unquestionably a part of the Asiatic continent; and the abundance of gold and pearls among the natives persuaded him that the scheme in which he had so long persevered was now being slowly accomplished. He had, he believed, in his previous voyages reached the Eastern Archipelago and the Continent of Asia, in a latitude twenty degrees north of the equator. He had now found similar islands and a similar continent ten degrees further to the south, or ten degrees north of the equator. Two lines of exploration were obviously suggested by the present discovery. The first, which continued the search for Cathay in its reputed latitude, was to explore north-westwards, tracing the coast which apparently connected Paria and Cuba. The second, which rested on the abandonment of Cathay, and the persuasion that the good things of the globe, its gold, its spices, its pearls, and its precious stones, were to be found most abundantly at the equator, was to explore south-eastwards. It is needless to enquire which line Columbus would take. Ever consistently tenacious of his original project in its original shape, and confirmed in his attachment to it by the successes which he had achieved, he adopted the former. But the leading part in the drama now fell to the share of others. While Columbus, a few years later, was coasting the sinuous shore of the Caribbean Sea, still in search of the rich civilisation of Cathay and Mangi, great changes had taken place. Other seamen had added to the map of the world the enormous region of Brazil, and demonstrated that the Columbian hypothesis

[1] Navarrete, vol. i. pp. 402–412.

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rested on a mistake, and that what had been reached was in fact a New World. Columbus, though he knew it not, was but helping to complete a discovery which they, not he, had begun.

Columbus deposed from the Governorship.

When Columbus returned to the government of Española, matters were in a worse condition than at his departure. The commercial success of the undertaking was as yet extremely uncertain: and the difficulties of maintaining it had multiplied. That good understanding between the Spaniards and the natives which had once existed had wholly disappeared. The colony of Isabella had been abandoned for the more convenient site of San Domingo; but the adelantado had failed to conciliate the Spanish colonists. Roldan, an official who owed his advancement to Columbus, had formed a hostile camp in another part of the island. Columbus was unable to restore order: and though he temporised with some skill, the hopeless condition of the settlement, added to the representations of the malcontents who had returned to Spain, induced the Spanish sovereigns to supersede him. Francisco de Bobadilla was sent to Española fully commissioned to act as Judge and Governor. On his arrival at San Domingo, the validity of his commission was disputed: and without more ado, Bobadilla put the three brothers Columbus under arrest, and sent them as prisoners to Europe[1]. The administration of the settlement was carried on by Bobadilla: and thus the fate of his discoveries finally passed out of the hands of Columbus.

Necessity of his deprivation.

No positive misconduct on the part of the Discoverer justified this harsh deprivation of his covenanted reward. His zeal and honesty were undeniable: and in this fact, taken together with the respect and goodwill which the Spanish sovereigns had for him, lies the proof that the step was in the strict sense a necessary one. Necessity is well said to be the tyrant's plea. But the tyrant's plea is never more excusable than when it justifies the summary removal

[1] Roderigo de Bastidas, who (see post, p. 182) had arrived at San Domingo after his cruise from Cape Vela to the Gulf of Darien, was also arrested and sent with them.

of an incompetent governor, such as Columbus unquestionably was: and the ultimate cause of his disappointment was his own imprudent ambition. In such a work as the discovery and settlement of the Indies there should have been a division of labour. Some Spanish commander, half soldier and half politician, such as Cortes or Gasca, should have been the organiser of settlements: to Columbus should have been assigned the extension of maritime discovery, in which he had no rival. But Columbus had resolved to engross all the rewards of his enterprise. He regarded the Indies as a rich gift entrusted by Divine Providence to his hands, and bestowed by himself on the Spanish Crown[1]. And his reward was to be deprived of his high office, and with it of the fruits of fourteen years' incessant anxiety and labour, and sent back to Europe in disgrace. Such was the faith of monarchs; of monarchs whom he had served, as he wrote in the bitterness of his heart, with a zeal exceeding the zeal with which he sought his soul's salvation. 'If I had seized on the Indies and given them to the Moors,' he wrote, 'I could not have been worse treated[2].' Columbus thus ascribed to the cunning of his enemies, and the ingratitude of his royal master and mistress, what was in truth only the natural result of his own lack of judgment.

Fourth Voyage of Columbus.

The march of events was rapid during the closing years of the century: and momentous incidents must be temporarily passed over in order to complete the story of the work of Columbus. Since the establishment of the Spaniards in Española, that great undertaking which Columbus had striven to anticipate by a new and shorter route had been successfully completed. Portugal had beaten Spain; for Vasco da Gama in 1498 had reached India by circumnavigating Africa. Equally rapid had been the march of events in the west. The English, long on the look-out for new lands, had entered the field: and John Cabot had visited the coast of what is now British North America. Hojeda and Vespucci had visited that of Venezuela: Vincent

[1] Navarrete, vol. i. p. 451.

[2] Ibid. p. 414.

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Pinzon, who had commanded the Niña in the memorable voyage of 1492, had accidentally reached that of Pernambuco: Peter Cabral, a Portuguese, following the course of Vasco Da Gama, had been drifted to the same spot. The Spanish sovereigns began to be alarmed. Vespucci, to whom rumour attributed discoveries indicating a new importance attaching to the newly-found coasts, had passed over to the service of Portugal. Yet the title of Isabella to the regions which had been added to the Castilian dominions remained unperfected, and their very configuration and extent were unascertained. The Discoverer was still in Spain, vainly pleading for his covenanted rights. The Spanish sovereigns had no intention of granting his prayer: but they resolved to employ him to secure and complete the discovery which he had begun. Incapable though Columbus had been proved as a provincial administrator, his reputation as a seaman was unimpaired. His energy had scarcely been damped by his disappointments: and he joyfully accepted the proffered commission. It was expressed in definite terms. He was to ascertain exactly the extent and population of the new isles and of that part of the supposed Asiatic continent which he had reached, and to embody his information in a formal report, indicating what parts of the Indies produced gold, pearls, precious stones, and spices, and in what quantity. He was to put down illegitimate traffic in the new Indies. Though forbidden to send Indians as slaves to Spain for sale, he was to despatch thither any who were willing to go in order to learn the Spanish tongue, and intending to return[1]. Briefly, the object of the voyage was to procure full information, with a view to the complete occupation of the newly-discovered lands. It was an object worthy of the genius of Columbus, and far above the petty functions of an administrator in Española. Energetically pursued, and with sufficient resources at command, it might have led Columbus to discover the New World in the larger sense. In more favourable circumstances he might have laid down on the globe the whole coast from Davis's Straits to Cape

[1] Navarrete, vol. i. pp. 427-429.

Horn, demonstrated the existence of a new continent, and indelibly marked it with his own name. But his mind was preoccupied by the geographical theories he wished to demonstrate: he was ever pining for the narrow sphere of his official dignity: his resources were inadequate to a task of unsuspected vastness: and the fourth voyage, which should have marked the climax of his fame, did but herald the close of a disappointed career.

Discovery of Honduras.

In May, 1502, Columbus set sail once more for the lands of the west, accompanied by his brother Bartholomew, and his youngest son Ferdinand. Nearly two years and a-half elapsed before he returned to Spain. During that time he had made discoveries which in his judgment fully confirmed his original opinions. The plan of the expedition was determined by what had gone before[1]. Its main object was the exploration of the supposed Asiatic continent or Terra Firma. This continent, as Columbus supposed, had been reached by him in two places; in Cuba in the North-west, and in the mountainous coast of Paria in the South-east. These two districts were above a thousand miles apart; and Columbus designed to ascertain whether they were separated by a strait leading to the Indian Ocean, and if not, to trace the connexion between them. Other navigators had already explored the coast on each side of Paria. Columbus therefore determined to explore the as yet untraversed seas to the south-west of Hayti and Jamaica. After quitting Hayti, the winds failing him, he was fain to drift with the current: and it was only after several days' beating about that he was able to sail south-west. At length the wind favoured him: and three days' sail from Cuba brought him to an island group, whence he could descry in the south a lofty mountain range. It was the coast of Honduras, lying seventeen hundred miles, as the crow flies, from the delta of the Orinoco, where six years before he had first beheld the great American continent. It trended east and west: and the Discoverer thus had to choose between two lines of exploration. He made his choice in his usual way. He produced gold, and en-

[1] See ante, p. 163.

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quired of the natives by signs in which direction that metal was to be found. They pointed to the east: and further intercourse with them convinced Columbus that the long-sought land of Cathay lay in that direction. To the east he therefore sailed, though wind and current were against him.

Cruise from Honduras to Veragua.

The result of the voyage might have been foreseen. The equipment of Columbus was not only quite inadequate to his task of exploring the whole inheritance of Spain in America, but it did not even enable him to survey the outline of Terra Firma as far as the Orinoco. The hurricane season had begun. His course was directly against wind and current, and for six weeks he laboriously tacked to the east along the bare and mountainous shore of Honduras. When Cape Gracias-à-Dios was at length rounded[1], as many more weeks passed before his weather-worn squadron reached the land of gold to which the natives had directed him, and to which they gave the name of Veragua. Its coasts exhibited plain evidences of a civilisation higher than that of the Caribs and Arawâks. Columbus found natives clothed after the oriental manner, cultivating the soil, living in villages, having temples and sepulchres built with stone and lime and decorated with considerable art, and above all, possessing gold in such abundance as to convince him that he must now have reached the famous Golden Chersonesus of the East. The latitude, as he correctly observed, was identical: and in his eagerness to reach the southern extremity, he quitted for a while the region of the mines, and followed the shore many leagues beyond. The land, he reflected with delight, was that which had supplied King Solomon with gold. Finding the supposed peninsula longer than he expected, he unwillingly returned, still convinced that a few leagues further would bring him to the strait of Malacca, by which in a few days the mouths of the Ganges might be reached. Returning to the shores of Veragua, he sought to found a permanent settlement. But the attempt signally failed. The warlike natives drove him to his ships: and Columbus

[1] So called because the coast there turned to the south.

retired, broken in health and spirits, to Española. Thence he sailed for Spain, and shortly afterwards died in obscurity at Valladolid[1].

Character of Columbus.

One of those giant men of science who are the glory of our age has endeavoured to prove that Columbus was above all things an observer of cosmical nature, a man of science, and worthy of a place among the forerunners of modern natural philosophy[2]. It would be easier to show that his tone of thought belongs to the Middle Ages. His ill-directed ambition, his sentimental fidelity to the monarchs who hired him and cheated him of his hire, his love of the show of power and dignity, his intolerance of any theory of his discoveries except his own, indicate a temperament far indeed from that of the philosopher: and the literary work which employed his latter years, treating of the prophecies which he had conceived himself to have been instrumental in bringing to pass, evinces a mind wholly under the sway of a gross and narrow theology[3]. In the execution of his enterprise, he declared that mathematics, cosmography, and mere human reason had been as nothing: he had been merely led by the spirit to accomplish that which

[1] Columbus died there on May 20, 1506, and was buried in the monastery of St. Francis. His remains were removed in 1513 to the Carthusian monastery of Las Cuevas at Seville, where his brother Bartholomew and his son Diego were afterwards buried. In 1536 they were removed, together with those of Diego, to the cathedral of St. Domingo: and in 1795, the Spanish part of Hayti having been ceded to France, they were removed by the Duke of Veragua, the representative of the family, to Havana. Columbus was soon forgotten by his own age, and was little remembered by any other, until the fortunes of America had passed out of Spanish hands. Since then, his fame has grown with the ever-growing importance of America. The late Pope (Pius IX) intended to bestow on him the honour of canonisation. The intention, however absurd on its face, was not without historical propriety, for Columbus, if any one, was a true son of the Church. It was however defeated by the polemical efforts of the Genoese priest Sanguinetti and others, who contended furiously against the admission into the rank of saints of one who had issue born out of wedlock.

[2] Humboldt, vol. iii. pp. 13–116. According to Humboldt's deductions from the Historie, Columbus, though believing in a pear-shaped earth, anticipated amongst other things the theory of the inflexions of the isothermal lines, and of the tropical currents, and much of the geology of the West Indian islands.

[3] Navarrete, vol. ii. p. 289. See also the 'Lettera rarissima,' written in 1503.

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had been foretold by the prophet Isaiah. Before the end of the world, it was the Divine Will that all prophecies should be fulfilled, the Gospel preached over the whole earth, and the Holy City restored to the Church. His discovery of the Indies was a miracle wrought by the Almighty to these ends. 'Rabbi Joachim of Calabria,' he gravely writes, 'says that out of Spain shall come he who shall rebuild the house of Mount Zion[1].' The end of the world would come in about a century and a-half. His discovery was destined to bring about the recovery of the Holy City and the tomb of the Saviour by means of the gold of the Indies[2]. For this purpose he proposed to equip an army of 50,000 foot and 5,000 horse for twelve years, to be paid out of the produce of his discoveries. These are not merely the dreams of his later years. Before his first departure, he informed Ferdinand and Isabella that the entire gains of his project should be devoted to the task of liberating the Holy City. The monarchs listened with a smile, and signified that nothing would be more agreeable to them. Columbus reminded them of the incident, and renewed his vow, as soon as there seemed any promise of success. Those whom I leave behind, he wrote, on quitting Hayti for Spain on the return from his first voyage, will easily collect a ton of gold while I am absent in Spain, so that in less than three years we shall be able to undertake the capture of the Holy Sepulchre and the conquest of Jerusalem[3]. As years lapsed, the prospect of any such expedition being undertaken by Ferdinand and Isabella vanished. Columbus then resolved so to dispose of the future profits of his enterprise as to create an independent fund destined to the same end. In a testamentary disposition of his goods, made before departing on his third voyage in 1498, besides enjoining on his son Diego to found in the island of Española four professorships of theology, the number to be in time further augmented, and to build a church and hospital in honour of St. Mary of the Conception, he willed that the accumu-

[1] Navarrete, vol. ii. p. 295.

[2] See ante, p. 126.

[3] Navarrete, vol. i. p. 265.

lations of the income of his property should be invested in shares of the Bank of St. George at Genoa, shares which then paid a dividend of six per cent., and the fund thus accumulated he destined in the first place to the recovery of the holy places, and in the second to the political support of the Papacy, already threatened by clouds on the horizon which heralded the great tempest of the Reformation[1]. The name of God seems to have been continually on his lips, even in familiar talk: yet, we are assured, no man had a greater hatred of blasphemy and vain swearing. He fasted and confessed with stern regularity, and made it his duty to repeat the canonical hours, as if he had been a priest. The favourite object of his personal devotion was Saint Francis. While he sojourned in Spain, in the intervals of his voyages, he assumed the dress of a Franciscan monk[2].

Avaricious and cruel spirit of his policy.

The quest of gold was the main object of the expeditions of Columbus. His letters evince this at every turn: and he delighted in making pompous eulogiums on its moral and religious value. Gold, he writes, is an excellent thing: who hath this, hath all that can be desired in the world: gold can even bring souls into Paradise[3]. In the pursuit of gold, Columbus himself introduced into America that accursed traffic in human flesh which our own generation has not yet seen abolished. The true riches of the Indies, he said, are the Indians[4]. On the day after his arrival in America he talks of the prospects of a traffic in the Indians as slaves: of these idolaters, he says, I can send to Europe whole shipsful[5]. This frightful anticipation was fully realised. In 1495 he sent home five hundred Indian slaves to be sold at Seville[6]. Bartholomew Columbus despatched three hundred more to Cadiz in 1496[7]. It is true that these were prisoners taken in open rebellion: but the rebellion had resulted from the cruelty of the gold-seekers.

[1] Navarrete, vol. ii. pp. 251–261.

[2] Bernaldez, cap. vii; Las Casas, vol. i. p. 44; vol. ii. p. 89. Cervantes and Moreto did the same.

[3] Navarrete, vol. i. p. 456.

[4] Codice Colomb. Americano, quoted in Humboldt, vol. iv. p. 11.

[5] Navarrete, vol. i. p. 320.

[6] Las Casas, vol. ii. p. 85.

[7] Las Casas, vol. ii. p. 180.

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It was to a great extent the relentless spirit in which Columbus carried on the slave traffic, and the cruelties which his policy involved, which produced the commission of Bobadilla. In the matter of this commission and its results, the prejudice of history has usually been in favour of Columbus, and against the injustice and insolence of Bobadilla in sending the Discoverer back to Spain in irons. Both Oviedo and Las Casas testify that Bobadilla was an upright and humane person, and the inference cannot be avoided that Columbus was guilty of great cruelty and recklessness[1]. Isabella exhibited strong womanly indignation at the continual arrival of slaves for sale, and frequently ordered them to be sent back to the Indies. Several liberated slaves in this way accompanied the expedition of Bobadilla himself[2].

Person of Columbus.

Columbus is described as a well-knit man above the middle stature, with keen and lively eyes, a long and commanding face, an aquiline nose, a ruddy complexion, and a large mouth. His hair and beard, originally of a reddish hue, had become grey at the age of thirty; and this premature greyness, the result of a fiery temperament and incessant labour and anxiety, may have strengthened that erroneous belief in his age which has generally prevailed. The existing portraits of Columbus bear little resemblance to each other: and it is difficult to decide between them[3].

Place of Columbus in the history of the Discovery.

To the day of his death Columbus remained ignorant or unconvinced of the fact that he had found a new continent. He regarded himself, not as the Discoverer of a New World, but as the fated bearer of the Gospel to the Indies[4], and the subjugator to the rule of the Spanish

[1] Humboldt, vol. iii. p. 282. [2] Navarrete, vol. ii. p. 274.

[3] Cancellieri, Notizie di C. Colombo (1809), p. 180. The best description of Columbus is that of Las Casas (vol. i. p. 44), whose father had sailed with the Discoverer in 1493. Gomara informs us that Columbus was freckled (pecoso). Of the supposed portraits of Columbus, that at Vincennes, by an artist of the school of Titian, is preferred by M. Jomard.

[4] In this sense he interpreted his name Christopher, the Christ-bearer, and usually signed his name Xpo-ferens. As the holy giant had borne the infant Christ across the river, so had he, Columbus, borne the Christian faith across the ocean. It was well that there was no one to explain to him that St. Christopher was a merely etymological saint, the name being the ancient German

monarchs of the vast and wealthy nations of Eastern Asia. He regarded himself as an instrument chosen by the Almighty for the accomplishment of an appointed end. The East was to be Christianised, its treasures were to be poured into Spain, by their help Jerusalem was to be rescued from the infidel, and then were to follow the Great Judgment and the Millennium. What embittered his last years was the scantiness of his own share in executing this magnificent programme: nor would he have felt himself compensated by the fame which in later years began to attach to his name on the score of his geographical discoveries. And even these, when traced out upon that enormous continent which the process of exploration gradually revealed, are comparatively limited in extent. Until his fourth and last voyage, he had done little more than to open the field for the labour of others. This last voyage, forced on by the fact that others were fast entering into his labours, and that events were taking an unforeseen turn, extends the total account of his discoveries to the West Indian archipelago, the mouths of the Orinoco, and the coasts of Honduras and Darien. Every step in discovery made after his arrival in the islands of the west tended to discredit his belief that he had reached the Asiatic archipelago: shrewder and less opinionated observers had disbelieved this from the first[1]. Columbus clung to his early belief with a pertinacity which would be astonishing if we did not know that a stubbornness which did no credit to his judgment and self-control was the very secret of his successes and his failures. Only in his earlier years

name of Good Friday (Christ-opfer), used in the Middle Ages as a Christian name, as the French names of feasts, Pascal, Noel, and Toussaint, were used.

[1] The first impression was that he had merely added another to the island groups of the Atlantic; Allegretti, Diarj Sanesi (Muratori, Rer. Ital. Scrip. vol. xxiii. p. 827). Peter Martyr guessed at once that Columbus had reached a new region of the globe. Opus epistolarum, ep. 135: 'Colonus quidam occiduos adnavigavit (ad littus usque Indicum, ut ipse credit) antipodes. Nec inficior ego penitus, quamvis spherae magnitudo aliter sentire videatur: neque enim desunt qui parvo tractu a finibus Hispanis distare littus Indicum putent.' What shook Peter Martyr in his well-founded suspicion was the similarity of the parrots brought home by Columbus to those of the East Indies.

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did that characteristic serve him. It procured him his caravels and his crews, and carried him westwards over the Atlantic. In all that followed, it did but impede him. No part of the career of Columbus is comparable to the thirty-six days of his first memorable voyage: and after his return from that voyage he rapidly sank into obscurity. In a few years, his name was scarcely mentioned, and the credit of his discovery was apparently transferred to others.

Successors of Columbus.

No general ferment was excited in Spain, much less throughout Europe, by the discovery of Columbus; and a curious circumstance attests the narrow compass within which the movement of exploration lay. The men who completed the discovery of Spanish America were without exception immediately connected with Columbus. Vincent Pinzon of Palos had commanded the Niña: Niño of Moguer had also been in the first voyage of Columbus: Hojeda, Juan de la Cosa, and Juan Ponce de Leon had been in the second voyage: Diego de Lepe was of Palos: Vasco Nuñez de Balboa was of Moguer: Antonio de Alaminos was of Palos. These few names not only complete the story of American discovery on the Atlantic coast, from Florida on the north to the Plate River on the south, but add to it the great discovery of the Pacific. The greater part of America may thus be said to have been discovered, and the limits of what was to be Spanish America to have been defined, by the exertions of men who had either accompanied Columbus in person, or belonged to the little port from which he set forth.

Venezuela visited by Hojeda and Americo Vespucci.

When the letter from Columbus describing the wealth of Paria, which he had reached on his third voyage, arrived in Spain at the close of 1498, there was an end of his purposed monopoly of the Indies. In 1495 a royal edict had gone forth authorising other adventurers to follow in his path. Against that edict Columbus had indignantly protested; and it was revoked. But now, on his own showing, the untold treasures of Paria lay open to the depredations of any interloper. It was necessary to encourage

Spanish volunteers to aid in securing them. A Spanish gentleman named Alonzo de Hojeda, who, after distinguishing himself signally in the Moorish wars, had taken part in the second expedition of Columbus, was allowed to fit out an expedition for Paria. The rights of Columbus were respected, for Hojeda was forbidden to approach either the islands or coasts of the Portuguese in the Atlantic, or those which Columbus had discovered previously to 1498. Juan de la Cosa, a Biscayan captain, who had accompanied Columbus in his second voyage, and was reckoned not inferior in seamanship to the Discoverer himself, was engaged as pilot: and Hojeda also carried with him one Americo Vespucci, a Florentine formerly in the counting-house of Berardi [1], an Italian merchant established at Seville who had victualled and fitted out the second expedition of Columbus. Taking the old route from Cadiz by way of Gomara, Hojeda sailed west and by south. He exceeded the mark: for his landfall was as far south as Surinam. Making his way northwestwards, along the level coast of Guiana, he reached the island of Trinidad, where the Spaniards landed in several places, eagerly observing the naked Arawâks, who figure conspicuously in the narrative of Vespucci [2]. Crossing to the continent, they explored the Gulf of Paria, where a few pearls were procured: and after passing the perilous strait which Columbus had named the Dragon's Mouth, followed the Discoverer's tract along the mountainous shore which bounds the Caribbean Sea on the

[1] He had probably managed the business for some time after the death of Juanoto Berardi in 1495. Humboldt, vol. iv. p. 47; cp. p. 267. Vespucci sailed in the expedition as a passenger. Seven years later (in 1506), when he compiled a narrative of all his alleged voyages, he altered the date of this first voyage to 1497. If this were the true date, Hojeda and Americo would have reached the mainland of America at Paria a year before Columbus. There is no doubt that 1499 is the true date. See Las Casas, vol. ii. pp. 268–274, where the false date is attributed to mistake, though in a subsequent passage (pp. 389–396) the writer seems to lean to the current opinion that it is due to fraud on the part of Americo.

[2] Primera Navegacion, Navarrete, vol. iii. p. 203. Las Casas (vol. ii. p. 401) points out that Americo's description of the Arawâks of Trinidad contains much which must have been derived from other sources.

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south. From time to time they landed in hopes of procuring gold. In one place they found a village standing in the midst of a lagoon. It consisted of a score of circular huts, built on piles and connected by drawbridges: and its aspect recalled the situation of Venice[1]. They called it Little Venice; and hence the whole coast obtained the name of Venezuela. Having sailed as far as Vela de Coro, they were forced to put an end to their cruise. Their vessels being worn out, and their supplies wellnigh exhausted, they altered their course for Hayti, and reached Spain in the following year. Gold or pearls they brought back little or none: the only return on the outlay consisted in a few wretched natives, who were sold as slaves in the market of Cadiz.

Voyage of Niño and Guerra.

The interest felt in the return of Hojeda was diminished by the fact that a navigator who had followed in his wake had returned two months before him, and had conducted an expedition planned on a more modest scale to a more successful issue. Hojeda was not the only adventurer whom the news of Paria had stimulated. A week or two after he had sailed, another companion of Columbus sailed for the coast of Paria. This was a seaman of Moguer named Peter Alonzo Niño. Accompanied by a banker of Seville named Christopher Guerra, Niño sailed from Palos in June, 1499, in a single caravel of fifty tons burden. They reached Paria a fortnight after Hojeda, explored the island of Margarita, where they procured a large quantity of pearls, and continued their explorations on the continental shore. In February, 1500, they set sail for Europe, and after a perilous voyage put into Bayonne with a valuable cargo of pearls and Brazil-wood.

Voyage of Vincent Pinzon and discovery of Brazil, 1500.

It is important to understand that the voyages which we are tracing were not voyages of geographical discovery. They were rather voyages for the discovery of the riches of the newly-found Indies. The region of the equator, and the coast to the south, was the general mark aimed at for several years after the third voyage of Columbus: and

[1] The Golfo de Venezuela, where such villages still exist. Navarrete, vol. iii. p. 8.

a few months after the nearly simultaneous departures of Hojeda and Niño two other adventurers of the Columbian school set out, within a few weeks of each other, for the same region. The first was the veteran navigator of Palos, the skipper of the Niña. Early in December, 1499, Vincent Pinzon set out with four vessels, taking the route of the Cape Verde islands, and standing well to the south. Pinzon was the first among American navigators to cross the equator. Scarcely was the southern hemisphere gained than he lost his course. The disappearance of the Great Bear utterly confounded him: and he looked in vain for the constellation of analogous configuration which he had expected to find at the southern pole[1]. Wind and tide alike baffled him. His squadron had fallen in with the great equatorial current: and driven on by a resistless storm which accompanied it, Pinzon made land, after a few days, in the eighth degree of southern latitude. He took possession in the name of the Spanish sovereigns: a ceremony which proved useless, for he was within the line of demarcation between Spain and Portugal agreed to by the treaty of Tordesillas. Pursuing his course to the north-west, he was the first European to cross the estuary of the Amazon river. He made his course by way of Trinidad to Española, finding little or no gold, and bearing away no booty but a few wretched natives, destined to be sold in the markets of Andalucia, and a small quantity of Brazil-wood. The voyage resulted in heavy losses to its projectors: and two only out of the four caravels employed in it returned to Palos. But it added something to the knowledge of the Terra Firma which Columbus had discovered. It proved that an enormous line of coast extended far to the east of the Gulf of Paria. It might well be thought that when all the lines of the new discoveries, from Cuba in the north-west to Cape St. Augustine in the south-east, were laid down on the chart, and compared with the eastern extremity of Asia, men would cease to identify the new lands with the Asiatic continent. But it was not so. In the strange aromatic plants and uncouth animals which

[1] Navarrete, vol. iii. p. 19.

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they continually found, in the great rivers and boundless forests of enormous trees which they passed, and in the naked savages who inhabited the coast, Pinzon and his companions found evidence confirmatory of the belief of Columbus, and suggestive of nothing beyond or against it[1].

Diego de Lepe reaches Brazil.—Voyages of Guerra and Bastidas.

The expeditions which followed in quick succession after the third voyage of Columbus in 1499 indicate a great stir in the ports of Andalucia. A month had scarcely elapsed since the expedition of Pinzon left Palos, when Diego de Lepe, another inhabitant of Palos, sailed in the same direction. Following the same course, he made land at the same place as Pinzon, and followed that navigator's track along the coast of Brazil to Paria and Española. Christopher Guerra undertook a second expedition to Paria in search of gold and pearls. Rodrigo de Bastidas, as will presently be seen, quickly followed him, and increased the existing knowledge of the great continental shore by sailing west of the Cape of Vela as far as the isthmus of Panama. But while the Andalusian seamen were thus slowly developing the discovery of Columbus, and completing what has been called the first historical process, an entirely independent discovery of America happened in the course of that third historical process, which, the reader may remember, consisted in the pursuit of the route to India round the west coast of Africa, and was in course of prosecution by the Portuguese.

Completion of the Third Historical Process—Cabral.

The exploration of the Northern Atlantic by way of Iceland and Greenland, which has been already described as the second historical process necessarily involving the Discovery of America, had, as the reader will remember, been completed five centuries before, by the Northmen, but with no permanent effect on the world's history. Yet the fact had not been utterly forgotten: and the time was now come when it would acquire its proper significance,

[1] Navarrete, vol. iii. p. 22. Those who incline to believe, as far as is possible, in Americo Vespucci must conclude that he accompanied Pinzon in this voyage, the details of which are identical with those of the second of Americo's 'Quatuor Navigationes,' as has been shown by Humboldt, vol. iv. p. 200. It is however necessary in this case to assume that Americo had quitted Hojeda at San Domingo, and returned at once to Spain: for Hojeda himself did not return to Spain until months after Pinzon had started.

and when English, Portuguese, and French seamen would follow in the Northman's wake. The voyage of John Cabot from Bristol in 1497 to the 'new isle' in the northern hemisphere has already been alluded to, and reserved for discussion when the process of discovery in that hemisphere is discussed. To the same head must be referred the first serious effort made by the Portuguese Crown to take part in the new discoveries, and estimate the probability of still reaching India by a westward route. For this purpose two ships sailed from Lisbon in the spring of 1500, under the command of Gaspar Cortereal. Exploration was busily going on in all directions. Simultaneously with the despatch of this expedition, and while the adventurers of Palos, intent on gold and pearls, were eagerly pressing in the wake of Columbus to the supposed Indies, another squadron sailed from Lisbon to follow Da Gama in the more circuitous route which he had certainly discovered to the true Indies round the Cape of Good Hope. The route to the southward round the African coast, as the reader already knows, could not have been long pursued without leading to a discovery of America in completion of what has been described as the third historical process. The great equatorial current could of itself hardly fail to drift some African explorer to the coast of Brazil: and the experience of Portuguese navigators had produced an additional element which made such a result certain. The reader has heard of the perils which beset the western coasts of Africa. To avoid these, the navigator who desires to round the Cape finds it best not to sail to the east of the meridian of the Cape Verde islands until he has reached the latitude of the Cape of Good Hope, and even employs the Trade-winds to make his southing some degrees westward of that meridian. This practice, adopted to the present day by sailing vessels, was enjoined on his successors by Vasco da Gama himself. When in 1500 a second expedition was making for the East Indies, commanded by Peter Alvarez Cabral, it probably stood out to westward more than was necessary. However this may be, it not only drifted into the equatorial current, but encountered a heavy

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gale of wind. When the gale abated, one of his vessels was no longer in sight. Cabral was continuing his course westward, in hopes of coming up with her, when to his delight and astonishment he sighted high land in the distance. It was the mountain range called Pascoal, and near the very spot which Pinzon had left three months before. Choosing a convenient place, to which he gave the name of Porto Seguro, Cabral landed and took possession in the name of King Emmanuel[1]. Under the shade of a large tree he caused mass to be celebrated before the wondering natives, and after erecting a stone pillar in the place, despatched Gaspar de Lemos to Portugal with the news, and pursued his journey to India[2]. Thus was the third historical process completed, and a Discovery of America produced wholly independent of the project of Columbus, and arising exclusively out of the efforts made by the Portuguese to reach India by circumnavigating Africa. Though Pinzon and Lepe had already reached the same coast, it was soon proved to lie within the limits assigned to Portugal by the treaty of 1494. The Portuguese monarch named the new country the Island of the Holy Cross. But the seamen of Portugal, who had so long been in search of the island of Brazil in the northern ocean, recognised it in this new land, as others had recognised Antilia in Hayti. It produced the famous dyeing wood in great abundance: and the name was confirmed by official use in 1530.

Second stage of American Discovery, dating from the discovery of Brazil, 1500.

The rudimentary stage of American Discovery terminates with the last year of the fifteenth century. During the eight years which it includes, the newly-found lands were supposed to lie off the eastern shores of Asia, and to form a part of the Indies, in the wide sense in which the term was applied. This name was in Spanish usage indelibly impressed on the newly-found lands, including the islands first reached. They were called absolutely the Indies. This became the official name of Spanish America, and so it remained long after Europe had given the new continent

[1] The little port where Cabral landed is now called Santa Cruz. The mass was said on the little island of Corôa Vermelha.

[2] Osorius, De Rebus Emmanuelis, lib. 2.

a new and distinctive name. The French, English, and Dutch, having regard to the situation of the new lands on the one hand, and of the true India on the other, with respect to Europe, distinguished them as the 'West' Indies: and when the possessions of these powers came to be mainly in the islands, it was to those islands that the name of West Indies came to be restricted. Thus also the use of the name 'Indians,' applied to the aborigines of equinoctial America by the Spaniards, became general throughout the continent. In after times, Europeans vainly substituted for this incorrect term that of 'Americans.' Down to the end of the last century this use of the term 'Americans' survived, when the events of the period of Independence gave it another meaning. The old name had always continued in use in America itself: and from Rupert's Land in the north to Patagonia in the south the native races now universally go by the name of Indians. The second stage of American Discovery begins with the discovery of Brazil in 1500. It consisted in the gradual revelation of a vast continental mass of land in the southern hemisphere, to which the name of 'South America' came afterwards to be applied. This vast mass of land was at length hailed as a new world: and the first conception of it as such is perhaps due to Americo Vespucci, from whom it received its name. Before entering on the curious story of the naming of America, I will briefly show by what steps the new land grew in magnitude before the eyes of Europe, until Europe could no longer resist the conclusion that a fourth quarter of the globe, a New World, had been added to geography, and that the Ptolemaic system of that science was at an end.

The great Terra Firma of South America revealed—Roderigo de Bastidas, 1500.

The reader knows that the original centre from which the exploration of the shore of the continent proceeded was the inland Gulf of Paria, having the mountainous peninsula of that name to the north, Trinidad to the east, and the delta of the Orinoco on the south, and discovered by Columbus in 1498. Columbus himself had worked westward from this point as far as the island of Margarita. Hojeda had followed still to the west, and filled up the

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line as far as Vela de Coro. Roderigo de Bastidas, with Juan de la Cosa for his pilot, now continued the task from this point, coasting the torrid flats that lie between the Gulfs of Venezuela and Darien, interrupted only by the Sierra Nevada of Santa Marta, with its cloud-piercing snow-peaks, the like of which no European sailor had ever beheld. Past this Sierra, Roderigo skirted the vast delta of the river Magdalena, and reached the marshy shores of the Gulf of Darien. Crossing this deep indentation in the coast, and making for the mountainous shore on the other side, he terminated his cruise near the northernmost point of the isthmus, about ten leagues westward of Cape San Blas. Thence he started for Europe by way of Española, having procured some gold, and a number of Indian slaves: but at San Domingo he was arrested by Bobadilla, and sent home along with the brothers Columbus as a prisoner[1].

Columbus 1502, and Pinzon and Solis, 1506.

From the point where Bastidas terminated his cruise, the task was taken up by Columbus himself[2], and the Discoverer revealed to the world of Europe the western parts of the isthmus of Panama, the mountainous shores of Costa Rica and Nicaragua, and both sides of the great peninsula of Honduras, as far as the island group off Cape Honduras. The extent of the peninsula of Honduras towards the west seems to have been roughly ascertained, and some knowledge gained of the adjacent shores of the peninsula of Yucatan, by Vincent Pinzon and Juan Diaz de Solis, about the time of the Discoverer's death (1506[3]). The researches of these explorers, however, did not prove the continuity of the two peninsulas: for twelve years afterwards, in an expedition guided by the famous pilot Alaminos of Palos, an attempt was made to circumnavigate it, in the positive belief that it was an island[4]:

[1] See ante, p. 164.

[2] But Columbus, it will be remembered, was coasting in the reverse direction, having reached the continental shore at Cape Honduras, from which he sailed eastwards. See ante, p. 168.

[3] Navarrete, vol. iii. p. 46.

[4] Gomara, ch. 50: 'De allí, que veian á Yucatan, echaron á mano izquierda para bojarla, pensando que fuese isla . . . . ca lo deseaban por cuanto se podian sopear mejor los isleños que los de tierra firme.'

and it is constantly referred to as an island in Spanish official documents for several years afterwards[1].

The Portuguese on the coast of Brazil, 1500-1504.

Though the longitude of the different parts of this great coast had not as yet been accurately ascertained, it appears to have been known from the first that the eastern part of this great Terra Firma lay within the meridian of demarcation, three hundred and seventy leagues west of the Cape Verde islands, which had been agreed upon on behalf of the Castilian and Portuguese crowns at Tordesillas. The Spanish seamen, as has been seen, were pushing their explorations even to the west, until they reached the supposed island of Yucatan. But it does not appear that until 1508 they made any explorations on the eastern coast. This part of the great Terra Firma was left for the Portuguese, who lost no time in exploring it. In May, 1501, Emmanuel despatched three vessels for this purpose[2]. They sailed along the coast as far as the thirty-second degree of latitude, or nearly the whole length of Brazil, and re-entered Lisbon in September, 1502. A second expedition, consisting of six vessels, under the command of Gonzalo Coelho, departed in June, 1503. Four of them were lost: the remaining two, says the chronicler, brought back with them Brazil wood, apes, and parrots[3]. These expeditions doubled the extent of eastern coast which had been revealed by the discovery of Cabral. The total result up to the death of Columbus was that the industry of European sailors had unveiled the whole northern coast of Central America and South America, from the Gulf of Honduras in the West to Cape St. Augustine, the easternmost point of Brazil in the East; and, at right angles to this northern coast, the eastern coast of South America from Cape St. Augustine southwards as far as the thirty-second degree of

[1] Documentos Ineditos para la Hist. de España, vol. i. p. 501.

[2] Galvam, Descubrimentos Antigos e Modernos, quoted in Humboldt, vol. v. p. 71.

[3] Osorius, De Rebus Emmanuelis, lib. ii. 1503: 'Aliam deinde classem Gundissalvo Coelio commisit, qua regionem a Caprale exploratam, quam Brasiliam vocant, perlustraret. Sed navigandi in regionem parum cognitam imperitia factum est ut Coelius ex sex navibus quatuor vadis allisas amiserit atque duas tantum plenas illis rubris lignis quae tellus passim fert, et psittacis atque simiis, in patriam reduxerit.' Cp. Damian de Goes, quoted in Humboldt, vol. v. p. 120.

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south latitude. It was altogether a coast-line of over seven thousand English miles; much longer than the whole coast-lines, west, south, and east, of the continent of Africa beyond the equator which the Portuguese had just added to the map on the other side of the Atlantic, and by far the greatest addition that had been made to geography since that branch of knowledge had reached the rank of a science.

Americo Vespucci.

A personage whose name has been already mentioned as a passenger in Hojeda's expedition of 1499 seems to have taken part in these Portuguese voyages: and however this may be, his name remains firmly associated with the exploration of the eastern coast of the great Terra Firma of Brazil, because it was through his narratives that Europe first learned how vast were the lands that had been thus discovered. Americo Vespucci was a descendant of an ancient Florentine mercantile family, who had emigrated to Spain in 1493 and had been received as a clerk in the counting-house of Berardi at Seville. After Berardi's death in 1495 he acted as the manager of the house, and in this capacity contracted with the government for sending out vessels to the Indies[1]; and in 1499 he made a voyage to the new world, in company with Hojeda. About this time, indeed, it would appear that Americo forsook the pursuit of commerce, and turned navigator. Those who maintain the veracity of Vespucci must believe his passion for navigation to have been such that when Hojeda was returning from the new world in 1499, Vespucci quitted him at Española, and hastened home in time to join the expedition of Pinzon which was then about to start for a more southerly latitude[2]. In after years he undoubtedly claimed for himself the credit of a voyage the details of which are identical with those of the voyage of Pinzon: and there seems no reason to doubt that he took part in the first Portuguese voyage of exploration to the coast of Brazil in 1501. This expedition, indeed, he represented as having been made under his direction, a claim entirely unsupported by other evidence: but if we are to believe his own account, Vespucci, who until 1499 had in all probability never made any voyage but

[1] Navarrete, vol. iii. p. 317.

[2] See ante, p. 175.

that between Leghorn and Cadiz, now projected and accomplished a voyage worthy of a place beside the great achievements of Columbus and Da Gama. Taking the usual course of the Portuguese seamen on the African coast, they sailed by way of the Canary islands, and made their first halt in the Gambia river, whence they crossed the Atlantic in a south-westerly direction. The land-fall was on the northern coast of Brazil, near Cape St. Roque, whence the course was continued to Cape St. Augustine. Thence it lay to the south-west; and in this direction they boldly sailed for seven hundred leagues, until they reached the thirty-second degree of south latitude. The voyagers noted with wonder and delight the strange constellations of the southern hemisphere, which seemed to them more numerous, large, and brilliant than those of the northern. They had occasionally touched land, but found no promise of gold: and on reaching the thirty-second parallel it was determined to cease this profitless and interminable course[1]. Though they had now been ten months at sea, the ships' captains were of opinion that the voyage might be continued for six months longer; and accordingly the course was changed to the south-east, in hopes of more profitable discoveries. South-east across the open sea these intrepid explorers sailed accordingly, on the 13th day of February, 1502. On the 3rd day of April, it was calculated that they must be five hundred leagues from the spot where they had quitted the coast. Despising frost and bad weather, they continued this course until they reached a barren, uninviting, and uninhabited island, which may perhaps have been one of the group afterwards named from Tristan D'Acunha, quitting which they steered north, made the coast of Sierra Leone, and re-entered Lisbon on the 7th day of September, having spent eleven months in the southern hemisphere. Such, in outline, is Vespucci's own account of the first Portuguese exploring expedition to the shores of

[1] Though the quest of gold was not the main purpose of the voyagers, they were evidently disappointed at finding none. 'Cognito quod mineralia nulla reperiebamus,' he says, 'convenimus una ut abinde surgentes alio per mare vagaremur.'

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the great Terra Firma. He wrote it in Italian, in the form of a letter addressed to Lorenzo di Pierfrancesco de' Medici, who was one of that famous family who had been driven from Florence shortly after Americo's emigration to Spain, and was then in exile at Paris. Americo's letter was communicated to the Italians living in the French capital, by one of whom it was translated into Latin[1], and sent to the press. Copying an expression employed by Vespucci, he boldly entitled this account of the voyage, in large Gothic type, MUNDUS NOVUS. The phrase, as the reader knows, was not new. Men had been for two thousand years dreaming of new habitable worlds beyond the ocean. Strabo had spoken of 'the Other Oikoumenê,' Pomponius Mela and Tertullian of the 'Other World' (Alter Orbis). The Portuguese voyagers, half a century earlier, had called the western coast of Africa 'A New World[2].' Peter Martyr had applied the term 'New World' to the West Indian islands in 1494, long before Columbus had reached the main-land[3]. Columbus habitually used the phrases 'New World' and 'Other World' to denote his discoveries, even while supposing them to form part of Eastern Asia[4]. But the recent voyages to the coast of the great Terra Firma had given the phrase a new meaning. Here at last was positive evidence of the existence of an enormous habitable land, lying in the southern hemisphere, and hitherto unknown. 'We are justified,' Vespucci had written, 'in calling this A NEW WORLD[5].' Such, in fact, it was: and men

[1] The translator, who calls himself 'Jocundus,' was, according to Mr. Harrisse (Additions to Bibliotheca Americana Vetustissima, p. 18), not, as Humboldt supposes, the 'Julianus Bartholomaeus Jucundus' of Lisbon who was sent to Seville by Emmanuel to engage Vespucci's services, but the Veronese architect Fra Giovanni del Giocondo, who resided in Paris from 1499 to 1507, in the employ of the municipality of that city.

[2] Ca Da Mosto, Proemio to 'Navigazioni,' ap. Ramusio, tom. i. p. 105: 'Che veramente in comparation di nostri, quelli per me veduti ed intesi Un' Altro Mondo si potrian chiamare.'

[3] Dec. 1. cap. 2. In the Preface to the 3rd chapter of the Decade, written in 1500, the simple 'orbis novus' of 1494 is thus developed: 'Novum, ut ita dixerim, terrarum orbem, catholicorum Fernandi et Elisabeth regum . . . ductu, ab Occidente, qui hactenus latitabat, repertum.'

[4] Navarrete, vol. i. p. 411, &c. Cp. Humboldt, vol. v. p. 182.

[5] 'Novum mundum appellare licet.' The Italian text of Valori has, 'Queste

rewarded him who made the fact a matter of popular knowledge by calling the New World after his name.

The Discovery and the Printing-press.

The little quarto pamphlet of four leaves printed at Paris in 1503 was not the first intimation of the new discoveries that had gone forth to the world of Europe. Ten years before, immediately after putting into Lisbon in March 1493, Columbus had penned a letter describing the islands discovered in his first voyage. The letter was at once translated into Latin and sent to the press; and the intelligence that new and populous islands had been reached in the Western ocean quickly spread over Europe[1]. Even after the lapse of four centuries, we can trace the effect which the news produced. From the first, it was employed in connexion with the manifest errors and contradictions found in existing geographical authorities, to throw doubt on the received system of geography, and contempt on those who wasted time in studying it. How contradictory, writes the author of the famous 'Ship of Fools[2],' in the year following the return of Columbus, are the measurements of the earth as already known to us, by Strabo and by Pliny! And since their time many lands have been found beyond Norway and Thule, which formerly were unknown.

parti del mondo che non senza cagione abbiamo chiamato Mondo Nuovo.' The passage is wanting in the collected 'Quatuor Navigationes.'

[1] The letter was addressed to Don Raphael Sanchez, Treasurer of the Spanish monarchs. The title runs thus: 'Epistola Christofori Colon, cui aetas nostra multum debet, de Insulis Indiae super Gangem nuper inventis,' &c. Besides an edition in the original Spanish, seven different editions in Latin, four without place or date, one printed at Rome, one at Paris, and one at Basel, appeared in a few months.

[2] Sebastian Brandt, 'Das Narrenschiff' (Basel, 1494), chapter 'Von Erfarung aller Land':

'Des Lands so man erkundet hat,
Plynius rächt das mit Schritten uss;
So machet Strabo Mylen druss.
Noch hat man sythar funden vile
Land, hynder Norwegen und Thyle,
Alss Isslant und Pylappenlandt,
Das vorhyn als nit was bekannt.
Ouch hat man sydt in Portigall
Und in Hyspanyen überall
Golt-inseln funden, und nacket Lüt
Von den man vor wust sagen nüt.'

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Moreover in (the dominions of) Portugal and Spain have been found islands abounding in gold and inhabited by naked men, of which nothing was formerly known[1]. Some there were who ridiculed the discovery itself as useless: but in thoughtful and cultivated minds more generous feelings were awakened. They rejoiced to think that the dream of two thousand years had been realised, and that the contracted circle of human knowledge had been enlarged, and hailed the feat of Columbus as the beginning of greater things[2].

The Printing-press and the Voyage of Vespucci.

Eagerly as the narrative of the first voyage of Columbus had been read, its effect was as nothing compared with that produced by the story of Vespucci ten years later. The 'Epistle' of Columbus spoke only of newly discovered islands: the 'Mundus Novus' proclaimed a new world. The pamphlet of Paris quickly spread over Europe; and translations of it in the vulgar tongues appeared in quick succession. The 'Niewe Werelt' was proclaimed in Flemish at Antwerp: and Vespucius was lauded on the title-page as the first of living seamen[3]. From the printing-presses of Augsburg, Nuremberg, Strasburg, and Leipzig, the story went forth in High-Dutch. In the cities of northern Italy, then the

[1] The Latin version (Basel, 1497) expresses this hopeless scepticism even more plainly:

'Praestita cosmographi lustrat documenta Strabonis:
Intactum toto nil sinit orbe quidem.
Quid, geometer, enim tantas in pectore curas
Concipis? Incassum circulus ista terit.
Plinius erravit, quamvis spectabilis auctor:
Errores varios et Ptolemaeus habet.
In vanum siquidem multorum corda laborant
Rebus in incertis quos ita sudor agit.
Antea quae fuerat priscis incognita tellus
Exposita est oculis et manifesta patet.
Hesperiae occiduae rex, Ferdinandus, in alto
Aequore nunc gentes repperit innumeras.'

[2] Peter Martyr (Dec. 1. ch. 3) says the learned received the news with gladness, disparagers grudgingly, scoffers with rage ('eruditos amice, detractores invide, mordaces rabide').

[3] 'Van der Niewer Werelt oft Lantscap niewelick ghevonden van de doorluchtigen Coninck van Portugael door den alderbesten Pyloet ofte Zeekender d'Werelt. Gheprint Thantwerpen aen Dyferen waghe. By Jan van Doesborch.'

chief centres of European intelligence, where every new geographical discovery was watched with intense interest, the voyage of Vespucci gained a higher significance. It was regarded as the finishing stroke in the great work which had been begun by the Portuguese on the coast of Africa. In November, 1507, there appeared at Vicenza a collection of the great voyages of the age of discovery. It included the voyages of Ca Da Mosto to the coast of Africa, of Vasco Da Gama to India, of Columbus to the islands of the western ocean, and lastly of Vespucci to the great Terra Firma. But the name of Vespucci alone appeared on the title-page, which announced the whole work as 'The Countries newly found, and the New World named from Americo Vespucci of Florence[1].' The New World, it thus appeared, had obtained a distinctive name. In order to show how this had come about, the story of Vespucci must be taken up after his return from the voyage which had made him famous.

Increased interest in Discovery. The Four Voyages of Vespucci.

In the first years of the sixteenth century the effect of the discovery of printing and of geographical exploration began to be combined. The number of books and of readers was increasing; and the interest in the rapidly developing science of geography was increasing also. Even now, when all parts of the globe, except the immediate vicinity of the poles, have been explored, no subject is of more absorbing interest than those parts which are still hidden from human curiosity. Far deeper and more absorbing was the interest awakened when suddenly men beheld those bonds relaxed, if we may use the figure of the Roman dramatist, by which five-sixths of the surface of the earth-sphere had been kept from knowledge. The interest of intelligent men was eagerly concentrated on the science of geography. Ptolemy, the Aristotle of that science, had already appeared in seven printed editions: the travels of Marco Polo and Mandeville had also been committed to the press. The first Collection of Voyages, properly so called, seems to have been printed by a German

[1] 'Paesi Novamente retrovati. Et Novo Mondo da Alberico Vesputio Florentino intitulato.'

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at Lisbon in 1502[1], consisting, as might be expected, of travels in the east. In 1504 appeared at Venice, and in the Venetian dialect, a collection of voyages in the newly discovered west, containing the first three voyages of Columbus, the voyage of Alonzo Niño, and that of Vincent Pinzon[2]. It is obvious that the great voyage in which Vespucci had taken part, already committed to the press, would soon be added to the common stock: but meanwhile Vespucci seems to have conceived the idea of a collection consisting exclusively of his own voyages. If we may credit his own account, he accompanied and had a great share in directing that second voyage to the Brazilian shore, which contemporary authorities describe as having taken place under the direction of Gonzalo Coelho[3]; for the details of the two voyages are identical. This second voyage was less fortunate than the first, and resulted in no additions to the map of discoveries. It served, however, the purpose of adding to the bulk of Vespucci's maritime exploits. Of the circumstances in which Vespucci about this time found himself we have but scanty information: but some passages in the publication about to be noticed lead us to suppose him to have been an unprosperous and dissatisfied man. On his return from the voyage with Coelho in 1504, he remained for some time in Lisbon, hoping for some permanent appointment, connected with the process of exploration, in the Portuguese service. This recognition of his labours never came: but while waiting in expectation of it, Vespucci conceived the idea of compiling a complete collection of his voyages, and of using it as an instrument of self-advancement. Counting his voyages with the Spanish seamen Hojeda and Pinzon, and his recent one with Coelho, he could now boast of having made four journeys to the New World. His fame had already gone abroad through Europe: and his know-

[1] 'Marco Paulo—Ho Livro de Nycolao Veneto—O trallado da carta de hum Genoves mercador.' (Harrisse, Bibliotheca Americana Vetustissima, Additions, p. 35.)

[2] 'Libretto de tutta le navigazione de Re de Spagna de le Isole e terreni novamente trovati, stampato in Venezia da Albertino Vercellese di Lisona.'

[3] See ante, p. 183.

ledge of the New World qualified him better than any living person except Columbus for the task of describing it. He had only sketched out the plan of his work, which he intended to entitle 'Quatuor Navigationes,' when the waning of his prospects of advancement in Portugal seems to have suggested to him that an account of the Portuguese voyages, the details of which were in Portugal itself kept a profound secret, would be acceptable to Ferdinand, who had now become by the death of Isabella regent of Castile, and that he might by this means obtain in the Spanish service that recognition of his capacity as a navigator, which was denied to him in Portugal. For this purpose he hastily penned a concise narrative of his four voyages, and despatched it to Ferdinand in Italy. It had the desired effect: for in the next year (1505) Americo had been summoned to Seville, where he had a friendly interview with Columbus: and in 1508 he obtained the post of Chief Pilot of Spain. He did not long enjoy this dignity, for he died in 1512, and was succeeded in it by De Solis.

Walzmüller gives to the New World the name of America.

Soon after Vespucci, weary of waiting the pleasure of Emmanuel, had despatched to Ferdinand the sketch of his Four Voyages, and was expecting the result at Lisbon, he met in that city an old acquaintance, of his own nationality, and now in the service of a sovereign to whom he had once been personally known. René, Duke of Lorraine and titular King of Jerusalem and Sicily, had been in his youth sent to Italy for education. He was put under the care of George Vespucci, a member of the monastery of Saint Mark at Florence. This worthy man was the uncle of Americo: and the latter thus became a fellow-student with the future Duke of Lorraine. When Vespucci related to Benvenuto, for such was the name of the Italian servant of René whom he met in Lisbon, the adventures in which he had been engaged, the latter offered to convey to his master a letter containing an account of Vespucci's exploits. Vespucci accordingly transcribed for this purpose the account which had already been transmitted to Ferdinand, and committed it to the care of Benvenuto, addressed to his master, and accompanied

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by an epistle recalling their early acquaintance, stating the reverses which he had met with as a merchant, and his self-dedication to the career of an explorer. In the dominions of René was the little University of Saint Dié. René, there can be no doubt, communicated the epistle to the scholars of this University, and when in 1507 a new treatise on Cosmography issued from the press of Saint Dié, it contained in an appendix the Four Voyages of Vespucci, together with a suggestion that the new region of which they spoke should be named after its discoverer. As this work was apparently compiled by the printer, Martin Walzmüller (Hylacomylus), it is in his name that this memorable suggestion is made. 'I see no reason,' says the writer, 'why this Fourth Part of the world should not take name from its sagacious discoverer, and be called Amerige or America.' For this idea he goes on to adduce a fanciful justification. Both Europe and Asia obtained their names from women: it is now the turn of the male sex: and the word AMERICA was forthwith written in large letters on the margin[1]. This freak of an obscure bookseller indelibly stamped the New World with its destined name. The name commended itself to the ear, and was soon taken for granted[2]. The work in which it first appeared was in truth of some merit, and quickly ran through three editions. It was soon reprinted at Lyons and Strasburg, and the narrative of the four voyages of Vespucci became the common property of

[1] Cosmographiae Introductio (1507), verso of fol. 15: 'Nunc vero et hae partes sunt latius lustratae, et alia quarta pars per Americum Vesputium (ut in sequentibus audietur) inventa est; quam non video cur quis jure vetet ab Americo inventore sagacis ingenii viro, Amerigen, quasi Americi terram, sive Americam, dicendam: cum et Europa et Asia a mulieribus sua sortita sint nomina.' In 1509, the anonymous Globus Mundi mentions 'America.' Schöner (1515) in the Luculentissima quaedam terrae totius descriptio, c. xi. fol. 60, boldly begins: 'AMERICA sive Amerigen, novus mundus, et quarta orbis pars: dicta ab ejus inventore Vesputio viro sagacis ingenii, qui eam reperit A.D. 1497. In ea sunt homines brutales.'

[2] See Mr. R. H. Major's monograph on a Mappe-monde of Lionardo da Vinci, Archaeologia, vol. xl. Peschel suggests that the word 'America,' like 'Australia,' commended itself to the ear by its harmony, and its resemblance in form to 'Africa.'

European geographers. It was thus that we find as early as 1507 the name America applied to the new-found Terra Firma in the west by the compiler of the collection of Voyages published at Vicenza[1]. It did not as yet include those vast lands, lying in the northern hemisphere, which the Northmen had reached five centuries previously, and which English and Portuguese navigators had now revisited. It was a vast isolated 'New Land,' lying mainly in the southern hemisphere, and probably affording communication with the Indian Ocean on the west, and having passages leading to the said Ocean on its north and south. Such is the conception which marks what I have called the second stage of American Discovery.

Further development of the Second Stage of Discovery.

The great mainland, thus named America, slowly grew in the eyes of Europe. The settlements of Española and Darien, the history of which will be sketched in the succeeding Book, became centres of exploration. There soon arrived news of a vast island discovered to the north of Española, and of a great ocean visible to the south from the top of the mountainous ridge of Darien. The process of exploration proper was continued far away in the south: and the Spanish pilots reached an enormous river which seemed to make the ocean a sea of fresh water. In 1506, the year of the death of Columbus, and the year before that in which America was named by Walzmüller, Solis and Pinzon had increased the knowledge of the new Terra Firma in the north-west by completing the discovery of Honduras, begun by Columbus, and making known the adjacent shore of Yucatan[2]. In 1508 Ferdinand commissioned the same seamen to explore the coast southwards from Brazil, but they appear to have returned without reaching the mouth of the Plate river. The time, in fact, had not arrived for prosecuting Spanish explora-

[1] The reader will see that the name which the New World thus acquired really proves, not that Columbus was forgotten, nor that Americo Vespucci usurped his fame, but that a new power had come into existence, greater than that of monarchs and councils, though capable of being set in action by feeble and obscure hands. The naming of America is but an illustration, though an early and striking one, of the power of the Printing-press.

[2] Ante, p. 182.

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tion in this direction; for although it was known that the Brazilian coast trended to the south-west, and that therefore Portuguese America must ere long come to an end on the map, and Spanish America recommence, the boundary line agreed upon at Tordesillas in 1494 was not actually applied even on the northern coast.

Process of discovery from the Antilles—Three Ocean-basins.

In order to comprehend the progress of Spanish discovery in its next stage, we must figure to ourselves the divided aspect which the West Indian seas presented to the colonists who were now established in considerable numbers in Española. The main chain of these islands, stretching east and west from Guadaloupe to Cuba, and continued by the mountainous peninsula of Yucatan, naturally formed a great boundary. South of this boundary lay the great quasi-Mediterranean sea known as the Caribbean Sea: and this, as the reader knows, had been explored in all its parts before the year 1506. North of this boundary, the ocean is separated by the peninsula of Florida into two other main divisions: a second quasi-Mediterranean sea, called the Gulf of Mexico, in the north-west; and in the north-east another sea which may also be considered quasi-Mediterranean, looking at its geological formation, the Sea of Florida, Carolina, the Bahamas, and the Bermudas. The process of discovery reached these three seas or ocean-basins in succession: first the Caribbean Sea in the south, the only one known to Columbus and Americo; next the Florida Sea in the north-east; lastly, the Gulf of Mexico in the north-west. The gradual process of exploration in these seas closely resembles that by which the coasts of Europe had been first revealed to the Phœnicians and Greeks. As these had explored in succession the Ægean, the Syrtic, and the Tyrrhenian basins into which the Mediterranean is naturally divided, and thus completed the discovery of one side of Europe, so the Spaniards explored in succession the Caribbean Sea, the Sea of Florida, and the Gulf of Mexico, and thus completed the discovery of one side of America[1]. The native population, with whom the Spaniards had to deal on the

[1] See ante, p. 24, note 1.

shores of the three seas, equally constituted three distinct groups. The Arawâks and Caribs, who dwelt on the Caribbean sea, were savages of the lowest type. The southern shores of the Gulf of Mexico were inhabited by a group of races in a social condition above the lowest, though far below the degree of culture which has sometimes been attributed to them. The shores of Florida were in the possession of warlike tribes wholly different from either of the other groups, and exhibiting that distinctive social condition which with certain modifications is common to all the North American Indians.

Circumnavigation of Cuba.

When Columbus died in 1506, only the southernmost of these ocean-basins was known to exist as such. Columbus had indeed crossed the Florida Sea, but it was as yet undistinguishable from the broad Atlantic; and the Gulf of Mexico was unknown. Before it could be reached, the extent of Cuba westwards had to be ascertained, the chain of those mountainous islands which separate the Caribbean sea in the south from the unknown waters of the Mexican Gulf and the Florida Sea in the north being thus completed. Had Columbus lived two years longer, he would have seen a favourite illusion dispelled. Cuba, as has been seen, he firmly believed to be the mainland of Asia. Its insularity, however, was soon suspected, and in 1508 finally demonstrated by Sebastian de Campo, one of the colonists who had come out with Columbus in 1493[1]. De Campo, by the direction of Ovando, who had since 1502 occupied the place of Columbus in Española, circumnavigated Cuba, beginning with the north side, and returning by the south: a task which occupied eight months. This discovery speedily led to others of far more importance. The colonists of Española had by this time become rich, and undertook on their own account the completion of the work which had been begun by the seamen of Palos.

Sketch of the Spanish occupation.

Two stages are generally to be traced in movements of discovery and colonisation. In the first stage the impulse comes entirely from the original starting-point of the

[1] Las Casas, vol. iii. p. 210.

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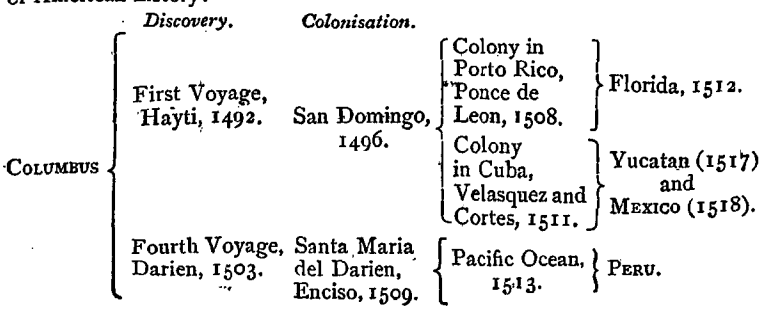
movement: in the second, the first results of discovery and colonisation become in themselves fresh starting-points, and the process seems to go on of itself, like a machine which has been set on work. Thus did the Phœnician colonies in Africa become fresh starting-points, whence the coasts of Spain were reached and conquered: and thus again did the Phœnician colonies of Spain serve as a base for the exploration of the western shores of Europe and Africa. Thus also in America have the first settlements on the Atlantic universally become fresh points of departure, where the genius of colonisation, so to speak, has paused and gathered strength, before taking a new flight to the westward. Hitherto the one centre of the Spanish colonisation had been the town of San Domingo in Española, founded in 1496 by Bartholomew Columbus. Thirteen years after, in 1509, as will appear in the following Book, another colony of gold-seekers founded the town of Santa Maria Antigua del Darien in the deep valley of the Darien river. These two settlements became fresh points of departure. From San Domingo there soon went out new colonies to Porto Rico in the east, and to Cuba in the west. The colonists of Porto Rico reached Florida: those of Cuba reached Yucatan and Mexico. The movements of the Darien colonists might be more easily predicted. One of their first feats would be to cross the mountains of the isthmus, and explore the shore of the Pacific, ever in search of the precious metals: and in this way Darien would become the door of Peru[1].

[1] The following diagram may assist the reader in remembering the beginnings of American history:—



Porto Rico and Cuba become starting-points of exploration.

The islands of Porto Rico and Cuba, both of which had been discovered by Columbus, thus became, after the lapse of twenty years, new starting-points for explorations which led ultimately to the knowledge of the Florida Sea and the Gulf of Mexico. Of the two islands, Porto Rico was best known to the colonists of San Domingo: and in the year of the circumnavigation of Cuba (1508) Ovando sent Juan Ponce de Leon, a wealthy colonist, who held under him an important military command, to ascertain the truth of the rumours of gold to be found in Porto Rico[1]. Ponce de Leon found abundance of gold in the little rivers on the south coast: and ten years afterwards, under the direction of Diego Columbus, Caparra and Sotomayor were added to the list of Spanish settlements. The same process went on in Cuba. Diego Velasquez, accompanied by Hernan Cortes as secretary, landed there in 1511, and in 1512 a settlement was formed on the site of an Indian village on the rocky coast at the mouth of the little river Macagnanigua[2]. It was the wealth accumulated by the labour of the natives in these rich islands which enabled enterprising men to recommence the process of discovery.

Coalition of the historical processes—Discovery of Florida from the South.

The impulse to maritime discovery having thus arisen in the Spanish colonial communities, it followed that twenty years after the original discovery of the islands by Columbus, and fourteen years after his discovery of the great southern Terra Firma, now named America, the final stride was taken by which the cycle of Atlantic discovery was completed, and the final coalition of historical processes effected. This final stride was the discovery from the south, in continuation of the series of events which Columbus had begun, of that great northern Terra Firma which was ultimately to be known as North America. The Northmen, as the reader knows, had long since called it VIN-LAND (WINE-LAND): and it survived in their national story as NYJA-LAND (NEW-LAND), a great and fertile isle lying beyond Greenland. The English, who had long since heard of it from the Nor-

[1] Las Casas, vol. iii. p. 435.

[2] On the site of the little town of Baracoa.

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wegians and Icelanders, and had conceived it as a great isle lying to the west of Ireland, which they called the NEW ISLE, and the NEW-FOUND-LAND, had in past years repeatedly visited it, as will presently appear. The French, also translating the Norse name, called it TERRE NEUVE: the Portuguese, who had also recently visited its shores, called it, perhaps in common with Iceland and Greenland, TERRA DE BACALLAOS. The Spaniards now reached it from the south, and called it FLORIDA. Their discovery of it was not the result of accident, but of deliberate and original exploration. Arguing from the map of the Antilles, from the recently demonstrated insularity of Cuba, and from the shape of the peninsula which was first reached, they supposed that peninsula to be an island. A few years, however, served to prove the continuity of this supposed island with the other supposed island of Yucatan, and of both with the great southern Terra Firma: and a few more served to prove its continuity with the lands in the north long since reached by the Northmen, and generally known in northern Europe as New-Land. The discovery of the great northern Terra Firma from the south, as will now appear, was the work of Juan Ponce de Leon, the wealthy colonist of Española, who had already added the island of Porto Rico to the territory under Spanish occupation.

Supposed island of Florida reached from Porto Rico.

Ponce de Leon, having become wealthy by the labour of the Indians on his estates in Hayti and Porto Rico, sought a wider field, and aspired to the fame and dignity which attended the discoverer of entirely new regions. The circumnavigation of Cuba, eight years before, had completed the lines of discovery upon which Columbus had entered. To the south of the Antilles, across the Caribbean Sea, there lay the great island of America which had now been known for twelve years. The seas to the north of the Antilles were unexplored: and it was in this direction that Ponce de Leon turned his eyes. There were rumours of another great island in these parts called Bimini: and the natives of the Antilles spoke of a wonderful spring which had the property of renewing

the youth of those who bathed in it. Ponce de Leon equipped three vessels, and sailed from Porto Rico on the 3rd of March, 1512, taking a north-westerly course, and leaving the Bahama islands on his left. On the 27th, being Easter Day, called in Spanish Pascua Florida or Feast of Flowers, he sighted a long low coast trending to the north-east. Finding the coast beset by huge sandy shoals, and a violent current running at sea, he was obliged to sail several days to the north-east before finding a landing-place. At length he landed, a few leagues, if his observations were correct, to the north of the present city of Saint Augustine, and took possession of the country in the name of the King of Castile. He then returned and surveyed the whole coast as far as the southernmost point of the peninsula, including those scattered islands which lie between the peninsula and Cuba. Thence he returned to Porto Rico, and lost no time in sailing for Spain, and procuring for himself the title of Adelantado and Governor of the great island which he claimed to have discovered. In his patent the island was called by the name of Bimini, given to it by the Indians of Hayti: but the Spanish name, derived from the day of the discovery, soon took its place, and from the peninsula opposite Havana to the desolate coasts of Newfoundland in the north the new land was known to the Spaniards as Florida[1].

Discovery of the Pacific, 1513.

When the great northern Terra Firma had been thus reached, but one step remained to be taken on the Atlantic side in order to transform the incomplete 'New World' of Vespucci into the great New World in its definite shape. This was to trace the connexion in the west and south between the land discovered by Ponce de Leon in 1512 and that which De Solis and Pinzon had sighted on the north-west of the gulf of Honduras in 1506. Before this was effected, a great discovery was made in another

[1] Navarrete, vol. iii. p. 50; Las Casas, vol. iii. p. 460. 'The name Florida,' says the latter, 'is applied to all the coast from the great cape which he discovered, as far as Bacallaos or Labrador, *which is not far from the island of England*' (la tierra de los Bacallaos y por otro nombre la tierra del Labrador, que no está muy léyos de la isla de Inglaterra). The natives, in the place where he landed, called it Cautío.

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direction. While Ponce de Leon was coasting the sandy shores of Florida, the colonists of Darien, under Vasco Nuñez de Balboa, had been eagerly scouring the neighbourhood in search of gold. They found abundance of the precious metal in the Indian villages: and a young cacique observing their eagerness, and their feuds over the division of the spoil, offered to point the way to a land where they might find gold to their hearts' content. Three Spaniards cried out at once in the Indian tongue, asking its name. 'Tumanama,' was the reply. How far off? 'Six suns' (days' journey), said the cacique: 'but you will need a great company to pass the mountains of the Caribs, which lie between here and the other sea.' The land was Peru; and this 'other sea' was the great Pacific. Columbus, it was afterwards stated, had heard of another sea beyond the mountains at Nombre de Dios ten years before. This is likely enough: but Columbus had no means of verifying the report. Ten years had changed the face of affairs: for the following year saw Balboa crossing the mountains at the head of a hundred and ninety armed men, in search of the 'other sea.' It was on the 25th of September, 1513, a little before midday, that the Pacific was first beheld by European eyes. A new and boundless field was thus opened on the other side of the great southern Terra Firma, just before its continuity with that in the north was ascertained: and the process of discovery henceforth embraced both shores of the great continent. On each of those shores the Spaniards were now on the eve of finding what they had been seeking for twenty years—a vast continental region rich in the precious metals. On the Atlantic side, they were about to discover Mexico, and on the Pacific side, Peru.

Gulf of Mexico entered by Spaniards from Cuba, 1517.

While discovery was advancing to the north and the south, attention was also directed to the west. The circumnavigation of Cuba completed, the next wave of westward exploration must necessarily reach the shores of the supposed island which Pinzon and De Solis had seen in 1506. By the year 1516 more Spanish adventurers had arrived in Cuba than could be accommodated with land

and Indians: and in that year a hundred and ten of them resolved to hire ships and seek fortune by sailing to the west. They chose as general one Francisco Hernandez de Cordova, a wealthy Cuban colonist, and the chief pilot was Antonio de Alaminos of Palos, who had conducted the cruise of Ponce de Leon. It was a voyage of pure adventure. What lands might lie to the west of Cuba no one knew: but the voyagers were in hopes of finding other auriferous islands. They therefore carried with them miners and mining implements, and government officers accompanied the expedition for the purpose of securing the royal share of the profits. It was on the 8th of February, 1517, that the adventurers sailed, directing their course by the setting sun. Twenty-one days, in the course of which dangerous storms were weathered, brought them to land. They had reached the peninsula of Yucatan near its northern extremity. It was the same shore which Pinzon and De Solis had seen ten years before: but of this the voyagers knew nothing. It was in their eyes a new land, never known or discovered before, and they gave thanks to God for it accordingly[1]. It soon became obvious that the inhabitants of this new land were in many respects superior to the Indians of Cuba. So great, indeed, was the contrast, that Cordova's companions indulged the wild surmise that they were descendants of those who had fled across the Atlantic when the Spanish peninsula was conquered by the Moors in the time of King Roderick, eight centuries before[2]. Instead of the naked savages of the Caribbean Sea, the explorers here found a race clothed in dresses of dyed cotton and wearing elaborate ornaments, dwelling in houses, which formed considerable villages, cultivating the soil, and domesticating the animals. Cordova landed on an island at the extremity of the peninsula, where he and his companions for the first time

[1] Bernal Diaz, Conquista de Nueva-España, c. 2.

[2] Gomara connects this surmise with the wooden and copper crosses which at one part of the coast were found erected over graves. Cordova's companions obviously had in mind the legendary emigration to the Isle of the Seven Cities (see ante, p. 98).

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beheld one of the idol-temples common to all the natives of the Mexican Gulf. It was a square stone chapel thatched with straw, elevated on a mound of earth, and approached by steps. Within there stood female idols of hideous aspect. Struck by the sight, the voyagers spoke of the place as 'Las Mugeres,' a name which the island still bears. The voyagers shortly afterwards landed near a village on the mainland, the name of which they understood from the natives to be YUCATAN[1].

Cordova explores the coast of Yucatan—Indian Village of Quimpech.

Cordova and his companions continued their voyage along the northern shore of the peninsula of Yucatan. It was not yet known to form part of the continent, and the pilot de Alaminos continued to assure them that it was an island. It was a low tract of land, having apparently neither mountains nor rivers, and covered with impenetrable forests. A cruise of three hundred miles and more from Las Mugeres disclosed no break in its dreary sandbanks and lagoons. At length, however, the coast changed its direction, and trended southwards: and ultimately the squadron one Sunday morning reached the mouth of a little river, where stood what seemed in the eyes of the voyagers a large town[2]. Cordova named the place Santo Lazaro, from the Lenten Sunday on which he reached it. The Indian name was Quimpech, or Campeachy: and by that name the settlement at the mouth of the river has always been known. Cordova landed and exchanged presents with the ruling cacique. Again the voyagers observed the comparatively civilised aspect and manners of the Indians: but what most struck them was an idol temple containing a large idol of human shape, standing between the figures of two savage beasts. Besides these, there was a serpent forty-seven feet long, in the act of devouring a lion, the whole being cut in solid stone. The walls and floor of the temple were red with

[1] Gomara, chap. 53. The natives, according to the tradition adopted by this writer, in reply to the enquiries of the Spaniards, replied 'Tectatan, tectatan,' which meant 'I do not understand.' Bernal Diaz adopts another explanation.

[2] 'Lugar crecido,' Gomara. 'Al parecer algo grande, y habia cerca dél gran ensenada y bahia,' Bernal Diaz. The present town of Campeachy, with nine thousand inhabitants, is entirely built on vaults constructed by the Indians.

the blood of immolated victims. Similar horrible spectacles were to meet the eyes of the Spaniards in all the districts bordering to the south on the Gulf of Mexico. A few leagues further to the southward Cordova reached the mouth of the little river Champoton, where he found an Indian settlement similar to that of Campeachy. Notwithstanding the hostile demeanour of the cacique of this place, Cordova, whose vessels were short of water, resolved to land. But the Indians made a fierce resistance, and after a sharp fight Cordova was compelled to retire to his boats, himself being wounded, and fifty of his men killed. This disaster forced the adventurers to return to Cuba. Such was the end of the first Spanish expedition to the Mexican Gulf. The Gulf as such, however, was not yet known to exist, for Cordova cruised around the peninsula of Yucatan in the belief that it was a large island like Cuba; and in the same belief a successor in exploration set sail for the same coast in the next year.

Exploration of the Mexican Gulf continued by Grijalva, 1518.

Step by step the Spanish colonists in Cuba were thus advancing to the discovery of the great country of Mexico or New Spain. Cordova's voyage had revealed to the colonists the existence of a great region peopled by native races who were considerably above the social level of the Caribs and Arawâks. The news had stimulated the curiosity of the Spaniards more than anything that had yet happened: and speculation was rife as to the origin of the civilised people of Yucatan. Some held them to be descendants of Gentile emigrants who had settled in these distant parts before the Christian era: others saw in them the descendants of Jews who had been driven from the Holy Land when Jerusalem was destroyed by Titus[1]. In the next year the exploration of the supposed island was eagerly renewed. The adventurers for the rich coast to the west had by this time doubled in number. In April, 1518, three caravels and a brigantine sailed thither carrying two hundred and forty Spaniards, under the direction of the pilot Antonio de Alaminos. Cordova had died of his wounds soon after his return to Cuba: and his successor

[1] Bernal Diaz, c. 6.

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as commander of the expedition was one Juan de Grijalva. Taking the same course as Cordova, Grijalva reached the island of Cozumel, and afterwards made land at the northern end of the peninsula, whence he followed his predecessor's track westwards and southwards. The arrival of the squadron at Champoton[1], where the cruise of the previous year had terminated so disastrously, was the signal for a great stir among the natives, and in the stillness of night the Indian horns and drums were heard summoning the natives to resist the invaders. Grijalva landed before daylight, and found himself face to face with a formidable muster of Indians. Their hostile demeanour, and the absence of any indications of gold, determined him to quit the place and continue his voyage. Beyond Champoton, the adventurers were opening up new ground. The coast was uniformly bare and desolate, until a broad bay was reached, which de Alaminos at first supposed to be the end of the island[2]. On landing here, the voyagers found sundry idol temples containing images of hideous aspect, but no settlement, the fact being that these temples were frequented by votaries from distant parts. Pursuing their voyage, the explorers next reached the mouth of a great river, where they anchored. It was the great river afterwards called the River of Tabasco or Grijalva[3]. A crowd of natives soon gathered around them, making hostile demonstrations. Among savage tribes, news flies quickly: and it appeared that the inhabitants of the Tabasco River had already heard of the landing of the Spaniards and the fight at Champoton. A parley being however arranged through the medium of two Indians of Yucatan who accompanied him, Grijalva was informed that the district was inhabited by natives well practised in warfare, and that two bodies of warriors, each eight thousand strong, were already mustered to resist him in case he was bent on war. The Indians, however, represented themselves as disposed

[1] Navarrete, following Gomara and Oviedo, says the place was Campeachy. I follow Bernal Diaz, who was in the expedition.

[2] Hence the original name 'Boca de Terminos.'

[3] Tabasco, according to Bernal Diaz, was the name of the principal cacique when Grijalva arrived here.

for peace, in token of which they offered presents of food; woven mats and blankets, perfumed gums burning on braziers, and a few slight golden ornaments. The last were greedily seized by the Spaniards, and eager enquiries were made for more. The Indians readily gave up their whole store, and pointed to the west, exclaiming significantly, 'Culba, Culba! Mexico, Mexico!' words which those who heard them did not forget, though at the time unable to divine their meaning.

Grijalva coasts the Mexican shore—Rio de Banderas.

More than suspecting, by this time, that Yucatan was no island, but part and parcel of the great Terra Firma of the New World, the party of Grijalva continued their voyage to the westward from the river of Tabasco: and for the first time the landmarks of the Mexican coast were beheld by Christian eyes. At length the voyagers saw the mountains which bound the plateau of Anahuac, backed by the enormous snow-crowned peak of Orizaba. Signs of population were not wanting along the whole coast: and on reaching the mouth of a little river which appeared to be a convenient landing-place, the Spaniards found a large party of Indians awaiting their arrival, and signalling to them by means of white flags hoisted on spears. Two boat-loads of Spaniards having first landed, with their arms ready for use, and ascertained that the intentions of the natives were friendly, the whole of the Spaniards went ashore. It appeared that the natives were subjects of a powerful chief named Montezuma, who resided at a great town called Mexico, the name of which the Spaniards had heard from the Indians of Tabasco, and which lay beyond the mountain-range which bounded the prospect to the west. Montezuma had been informed of the cruise of Cordova on the Yucatan shore in the previous year, and of the arrival of Grijalva himself. He understood, from the account of the encounters at Lazaro and Champoton, pictures of which, painted on cloth, had been sent to him, that the Spaniards, though few, were enabled by their weapons to become a match for great numbers, and that their object in coming was to procure gold in exchange for the merchandise which they carried. He

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therefore ordered his subjects to receive the Spaniards well, and do all that they could to aid them in their object. Such was the message which the flag-bearers delivered to the Spaniards, accompanied by the usual presents of food, incense, woven mats, and golden trinkets. Montezuma's directions were faithfully carried out. The simple natives brought forth their whole stores of gold. During the six days of their stay, the Spaniards obtained, in exchange for their merchandise, trinkets of more or less pure gold amounting in weight to 15,000 dollars, besides many golden statuettes. Never since the discovery of the New World had such good fortune befallen a party of exploration. Having exhausted the supply of gold, the Spaniards embarked, and continued their cruise. Passing an island, where Grijalva landed, and found stone temples, with the usual altars and hideous idols, and the remains of five human sacrifices, the Spaniards arrived at the port of St. John de Ulua, where a similar spectacle awaited them. Here they found a shrine containing a huge idol figure of monstrous aspect, called Tezcatepuca, before whom there lay the remains of two youths who had been sacrificed on that very day. The priests of Tezcatepuca, repulsive figures with unshorn hair, would have incensed the new-comers with the same incense that was offered to their idol, but the Spaniards refused their homage with loathing. The place being found poor in gold, Grijalva resolved to pursue his voyage, first despatching Pedro de Alvarado to Cuba with a ship carrying the booty which had been gained, and news of the great discovery. Grijalva was for founding a permanent settlement on or near the river where the Indian flags had first been seen waving. His party, which had been diminished by deaths, was too small for the purpose, and he desired the Cuban governor to send more adventurers. Alvarado having sailed for Cuba, Grijalva continued his cruise along the Mexican shore, which now began to trend northwestwards[1].

From the memoir of one who took part in Grijalva's

[1] Bernal Diaz, ch. 13–15. The Rio de Banderas, or River of Flags, where the messengers of Montezuma were awaiting Grijalva, is probably the Rio Blanco.

voyage we learn that he was extremely desirous of signalising his discovery by founding a permanent settlement. The other commanders dissuaded him, insisting on the scanty number of the adventurers, and the hostility of the natives: for it was obvious that the friendly attitude of Montezuma was assumed in self-interest, and that the time must come when the land must be peopled by Spaniards, between whom and these man-immolating savages there could be no peace. Grijalva yielded, and continued his cruise. The shore gave evidence of considerable population. Large villages were observed at a distance of two and three leagues; and the great range of volcanic mountains still bounded the view. At length the country resumed its wild aspect: and a few days' sail brought Grijalva to the broad mouth of the river Tampico, where a fierce attack was made on his ships by a number of savages in canoes. Satisfied, it would seem, that he had reached the end of the gold-producing region, and partly induced by the ill-condition of his ships, he gave the signal for returning. It was early in the month of July, 1518, when he retraced his course, but he did not reach Cuba until October. His expedition was far more important in its results than that of Ponce de Leon. He had not only made a great geographical discovery, by proving the non-insularity of Yucatan, and a great prolongation of the great Terra Firma in a north westerly direction, but he had revealed to the cupidity of the Spaniards a region inhabited by a comparatively civilised race, and richer in gold than any hitherto reached [1].

Grijalva reaches the River Tampico, and returns.

The expedition of Grijalva had a double result, corresponding to this double import. Preparations were simultaneously made on the one hand for reducing to submission the powerful barbaric chief Montezuma, and on the other for ascertaining by a new maritime expedition the geographical limits of the region thus newly added to the map. The expedition of Cortes accomplished the first; that of Alonzo Alvarez de Pineda, who undertook the second, may be said to complete the history of American

Results of Grijalva's expedition —Further explorations of Pineda.

[1] The gold procured by Grijalva amounted to 20,000 dollars. Bernal Diaz, ch. 16.

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discovery. It was undertaken at the cost of one Francisco de Garay, an adventurer who had been in the second voyage of Columbus, had married one of the Discoverer's kinswomen, and shared in the turn of fortune which came to the family after the Discoverer's death. On the restoration of Diego Columbus to the Admiralcy, he appointed Garay to the governorship of Jamaica. Garay, who had been very successful as a gold-seeker in Española, and was now a wealthy man, equipped four ships for the purpose of tracing the Mexican shore northwards, thus reviving the original Columbian project. The object of his expedition was to reach the open sea presumably lying to the north of the Mexican coast, or in other words to discover the strait, still supposed to exist, leading from the Atlantic to the Pacific. Between eight and nine months were consumed by Pineda in this undertaking, the result being to demonstrate the continuity of the coast first made known to the world by Grijalva with that which Juan Ponce de Leon had discovered on Easter Day seven years before[1]. Pineda thus filled up the only gap which remained in the knowledge of the American shore. It was well known that Florida was a vast land extending many degrees northwards of its southern cape. Pineda proved its continuity with Mexico, and through Mexico with the great Terra Firma of the south: and AMERICA thus suddenly became in the eyes of Europe a vast continent occupying at least an equal space of latitude on both sides of the equator, and rivalling the old world itself in the length of barrier which its coasts presented to the Atlantic ocean. This may be described as the third and final stage of American discovery. In order to complete it, nothing remained but to establish the connexion between Florida and the New Land of the Northmen.

Third Stage of the Discovery.

To the second stage of the Discovery, in which America figured as a great island lying mainly in the southern hemisphere, there thus succeeded a third stage, in which the name of America was applied to the entire continent. From

[1] See the licence to colonise granted to Garay, in 1521, in Navarrete, vol. iii. p. 147. Pineda was killed by the Indians of the Panuco. Bernal Diaz, ch. 133.

about the year 1507, the conception of a New World, taking name from the traveller who first announced its situation and extent, replaces the 'Indies' of the Spanish explorers. Northward of the great southern island or continent of America, there lay the archipelago of the Antilles. When at length other lands were seen yet farther north and west, it was not unnatural to suppose these also to be islands, and to regard them as forming a continuation of that archipelago. The nearest of these more northern lands was the peninsula of Florida, which was first reached from the Bahamas in 1513. In the west was the great island of Yucatan, first seen in 1506, and rediscovered in 1517. The connexion of both these supposed islands with the southern Terra Firma was, as the reader is now aware, traced in 1519. The insular America in the southern hemisphere thus developed into the complete continental America of modern times. Meanwhile, further materials for completing the map had been accumulating. As the reader knows, other supposed islands yet farther north had been discovered five hundred years before, and traditions of the discovery still survived. These had now been revisited, and until the voyage of Pineda in 1519 a chain of great islands was imagined to extend from Cuba to Iceland. Beyond Cuba and Española there lay, to the east Jamaica and Porto Rico: to the west, Yucatan: to the north, Florida: beyond Florida, were placed Terra Corterealis, Terra de Labrador, Greenland, and lastly Iceland. According to this view, America was the greatest island of a great archipelago. Such was the common belief: but long before the discovery of Yucatan and Florida it had been surmised by some that the coast of America extended into the northern hemisphere, and was identical with the 'New Land' of Cabot and the Northmen[1].

It is a well-known law of nature that waters of low tem-

[1] The chief authority for the early date of this surmise is the map of Juan de la Cosa, dated 1500, of which a facsimile is to be found in the magnificent work of M. Jomard. If his map is really of this date, Juan de la Cosa's conception of a continuous continent extending from the southern Terra Firma to Newfoundland must be regarded as a remarkably happy conjecture. It was probably based on the analogy of the Atlantic outline of the Old World.

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perature yield the finest and most abundant supply of fish[1]: and from a remote period the fishermen of Western Europe have year by year crossed the Gulf-stream and plied their trade in the cold waters which flow from the Polar seas. In the fifteenth century the productive cod-fisheries of Iceland were frequented by English fishermen. The coasts of Iceland were also visited for general trading purposes. Then, as now, the Icelandic fishermen caught and dried large quantities of cod, which they exchanged for the merchandise of Bristol and Lisbon[2]. Columbus had been engaged in this trade: and as the reader is aware, he had not only sailed to Iceland, but a hundred leagues beyond it[3]. This voyage, however, seems to have had no direct connexion with his famous undertaking. Westward exploration was divided into two entirely different fields, one in the north, the other in the south. These fields were separated by the barrier of the Gulf-stream.

Henry of England and Northward Exploration.

The concentration of Spanish and Portuguese enterprise on the new lands within the tropics left the field north of the Gulf-stream open to the two remaining maritime powers of Western Europe. We know that Columbus had intended to apply to France in the event of failure elsewhere, and that proposals had been actually made by Bartholomew Columbus in England, and most favourably entertained. When the success of Columbus was noised abroad, Henry felt that a great prize had slipped from his grasp. At this time, as it happened, an unusually close and constant intercommunication existed between the Court of Henry VII and the Court of Ferdinand and Isabella. Negotiations were in progress for so important an event as the marriage of the Princess Katherine with Prince Arthur of England. As the tidings of the discovery of Columbus must have spread rapidly wherever communications existed with the Spanish Court, there is every reason to believe that such tidings were not slow to reach England,

[1] Maury, Physical Geography of the Sea, § 65; Hartwig, Die Tropenwelt, ch. 22.

[2] Hartwig, Der Hohe Norden, p. 436.

[3] Supra, p. 111.

and that Henry resolved on taking part in the movement[1]. The traditions of English politics forbade an English sovereign, however good a Catholic, from holding himself barred by a title derived from the Papal grant: but Henry's friendly relations with the sovereigns of Spain forbade any encroachment on those new rights which they so highly valued. Accordingly we find him resolving to restrict his undertakings to northern latitudes. There was ample ground for enterprise in this field. There can be little doubt that Henry was familiar with the legend of Madoc[2]; and the achievement of Columbus seems to have confirmed him in the belief that a Western island or islands existed in the latitude of Great Britain. Current literature supported the belief. The Golden Legend, one of the most popular of books, told of the island reached by St. Brandan: Adam of Bremen spoke of the island which the Northmen called Wineland: Sir John Mandeville's travels had spread more widely than either the belief in an island lying in northern latitudes which might be reached either by way of Norway or by way of the East Indies. All these accounts, in the eyes of Englishmen, related to one and the same island, which was known as the 'New Land' or the 'New Isle:' and Henry resolved to search it out and take possession of it. He consulted a seaman of a port where no doubt was entertained as to the existence of such an island. At the head of the navigator's profession at this time was an old Italian called John Cabot[3]. Born in the Genoese Riviera, about the year 1425, Cabot had successively settled in Venice, married a Venetian wife, become a Venetian citizen (1476), passed some time in Seville and Lisbon, and finally settled in Bristol. In 1495, Cabot had been employed by Henry the Seventh in a negotiation with the king of Denmark, respecting some interruptions which the merchants of Bristol had suffered in their trade to Iceland[4]. There

[1] This view of the Cabot voyage is supported by Handelmann, Gesch. d. Amer. Kolonisation, i. 9.

[2] See ante, p. 95.

[3] The original form of the name is Gabotto.

[4] Anspach, Hist. of Newfoundland, 25.

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is abundant evidence that at this time the sailors of Bristol had been for many years eagerly searching for the island of Brazil in the Atlantic[1]. Constant connexion existed at this date between the port of Bristol and Iceland[2]. Now to the Icelander in the time of Cabot the exploits of Biarne and Leif were as well known as those of Anson and Cook are to the modern Englishman. The Sagas in which these exploits were related may be called the Icelandic Shakspere: they constitute what is, next to the Bible, the best and most popular book in the Icelandic language. They were equally so in the time of Cabot: and there can be little doubt that the island sought by the seamen of Bristol was the Wineland of Icelandic story. We do not know how far Cabot informed himself from books or tradition as to its situation. What is certain is, that Henry the Seventh commissioned Cabot to set out and discover or 'find' this New Land or Island, that in 1496 or 1497 Cabot started in search of it[3], and that he went by way of Iceland, and followed the well-known track of the Northmen. Before setting out, he obtained a grant similar to that of Columbus, which recited that he was the undertaker of the voyage, and secured to him and his sons the benefit thereof, if any should accrue.

Voyage of John Cabot.

Cabot's grant bore date March 5, 1496. It was drawn in the usual form for securing to him and his sons the reward of their prospective toil and outlay. The supposed fact that the expedition was not undertaken until the next year has been thought to indicate some opposition offered to the plan on the part of Spanish and Portuguese diplomatists. If the voyage was really thus delayed, the delay rather points to the difficulty of raising funds, and to the growth of a more liberal disposition on the part of Henry himself. He was at the same time urging on a second one, which

[1] Bergenroth, Calendar of State Papers, vol. i. p. 177; D'Avezac, Navigations Terre-Neuviennes de J. et S. Cabot, 10. John Jay the younger, who was Sheriff of Bristol in 1472, had made a voyage for the discovery of the Island of Brazil in 1480.

[2] Hakluyt, vol. i. p. 201; Humboldt, vol. ii. p. 117.

[3] M. D'Avezac holds the date to be 1494. Mr. R. H. Major has shown it to be 1497 in the Archaeologia, vol. xliii. pp. 17–42.

set out from London. On the 22nd of the same month of March, 1496, Henry advanced a sum of £20 to a London merchant called Lancelot Thirkill 'upon a prest for his ship going towards the new Ilande.' No such loan is recorded to have been made to Cabot: but there can be little doubt that Henry did more for the expedition than stands on record. We know nothing of the issue of Thirkill's preparations: nor have we any original details of the voyage of Cabot. The voyage took place, and the New Isle was reached: but more than this cannot be said. Everything connected with this first expedition of Englishmen to the New World is enveloped in a mystery which contrasts oddly with the profusion and exactitude of detail in which we know the first voyage of Columbus. We know for certain neither when Cabot sailed, what land he made, what he found, nor how he returned. He probably sailed from Bristol in 1496, wintered in Iceland, and set out for the New Isle by way of the coast of Greenland in the spring of 1497. His land-fall may safely be fixed at the shore of Labrador or Newfoundland: but it is doubtful how much of the coast he surveyed. He claimed, as will be seen, to have coasted the New Isle for a distance of three hundred leagues, which if strictly true would lead to the conclusion that he reached the latitude of Boston. The statement freely maintained in after years, that he sailed as far as the Gulf of Mexico, is opposed to all probability, when we compare the conditions of navigation on the North American coast with the resources at his command, the object of his voyage, and the short time it occupied[1].

Evidences of Cabot's Voyage.

Nearly a century afterwards, when the English were preparing to wrest the New World from Spain, a new significance attached to the voyage of John Cabot. He had been the first to reach the Terra Firma of America. Columbus had reached it in 1498: Pinzon and Vespucci in

[1] No credit can be attached to the claim set up in after years by Sebastian Cabot to a share in the voyage of his father. His own rambling statement to Peter Martyr (see Dec. iii. cap. 6) confirms the belief that he never saw the shore of North America.

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1499: Cabral in 1500. But Cabot had reached it in 1497: and if this fact could be established, the American continent became England's by right of first occupation. No evidence, however, was forthcoming. The Spaniards denied the voyage altogether; and in the eyes of European critics, the sole authority for the voyage was the word of John's son Sebastian, a professional navigator who had hired himself alternately to both England and Spain. No contemporary record of the voyage existed. A popular London Chronicle, written by one John Fabyan, and published in 1516, in which so important an occurrence would surely have been noticed, gave no account of it: and so damaging to the English title to the discovery of the continent was this felt to be, that in a subsequent edition there was inserted a forged account of Cabot's return, alleged to have been copied from a manuscript in the possession of the antiquary Stowe. But documentary evidence has since appeared which makes it certain that John Cabot really reached the coast of North America. On the 10th of August, 1497, the Privy Purse expenses of Henry VII show a payment of £10 'to hym that found the new isle.' Some days after this (August 23) a Venetian merchant resident in London despatched an account of this voyage to his brothers in Venice[1]. John Cabot had discovered a continent, and had coasted along it a space of three hundred leagues. On his return, he had left two isles on his right hand. Early in the next year (Feb. 3, 1498), John Cabot obtained a second patent from Henry VII, in which the new country is described as 'the londe and isles late founde by the said John in oure name and by our commaundemente.' This important entry completely establishes the English claim to the rediscovery of the American continent. It is true that the geographical relation of the land thus reached to the supposed Indies which had been reached by Columbus was as yet unknown. But Cabot's voyage, as will now be seen, was an important link in the process by which the conception of America was extended from the island

[1] Lorenzo Pasqualigo; D'Avezac, 13.

coasted by Vespucci, and lying chiefly in the southern hemisphere, to a vast continent reaching to the Polar sea.

Other early English Voyages to America.

English explorers continued to visit the American coast. In the spring following Cabot's return, we meet with Lancelot Thirkill again, this time in company with one Thomas Bradley. On April 1, 1498, Bradley and Thirkill were once more starting for the New Isle; and Henry VII on this occasion lent them a sum of £30. A fourth mariner, one John Carter, 'going to the Newe Isle,' receives the sum of two pounds. This clearly shows that the voyages to the New Isle were by no means the monopoly of individual adventurers. Yet undoubted monopolies might have been claimed under the grants in reliance upon which their enterprises were undertaken. Thus, a company for discovery and colonisation was formed by a patent of Henry VII, dated March 19, 1501. The persons privileged are Richard Warde, Thomas Ashehurst, John Thomas, all of Bristol, and John Fernandus, Francis Fernandus, and John Gunsolus, of Portugal. They are empowered to sail East, West, North, and South: and to find, recover, discover and investigate islands, countries, regions and provinces of Gentiles and Infidels, and to enter on and take possession thereof as King Henry's vassals. This grant is accompanied by a general permission for emigration, and a power to the grantees to make laws for good and quiet government. They are to have for ten years the exclusive trade of the lands discovered by them: and during four years are to be entitled to unload one vessel duty free in England. They are to appoint deputies for the government of cities and towns: and the office of king's admiral is conferred on them, and the survivors and survivor of them. The lands of which they take possession are to be held by them, their heirs and assigns, by fealty only. There can be no doubt that these adventurers also reached America. Ten months afterwards, on the 7th of January, 1502, the King's Privy Purse Accounts show a payment of £5 'to men of Bristol that found th' isle.' Yet again, on the 30th of September in the same year 'The merchants of Bristol that have been in the Newe

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Founde Launde' appear to claim their reward, and receive the sum of £20. That these merchants were the Warde company is rendered probable by the fact that about two months afterwards a second patent was made out in their favour, with this difference, that the names of Warde, Thomas, and John Fernandus are dropped, and that of Hugh Elliott is added. By this grant their commercial privileges are extended. The privilege of exclusive trade is extended from ten to forty years: the exemption from duty for a single vessel to fifteen years: and a similar exemption is made for a second vessel, which is to last for five years. Nothing further is known of this venture. The King encouraged others by loans: but the remaining records do not indicate any substantial success[1]. The conclusion to which the early voyages thus recorded point is that the New Isle offered nothing to fix the attention of the English adventurer. The gold-producing regions about the equator attracted all eyes. We learn from other sources that English explorers made their way further south. Pinzon, in 1499, found Englishmen on the coast of Venezuela[2].

Portuguese Voyages to the 'New Isle'—the Cortereals.

The English voyages of 1497–1504 quickly became known in the Peninsula. As early as 1500, De la Cosa laid down on his map a headland called 'English Cape' and a 'Sea discovered by the English:' and in the same year a Portuguese explorer followed in the track of Cabot. The sailors of Bristol and Lisbon, as we are aware, were equally in communication with Iceland: and the priority of the English in the rediscovery of North America is attributable to the preoccupation of the Portuguese with expeditions to the south. The

[1] Privy Purse Expenses of Henry VII:—

'17 Nov. 1503. To one that brought hawkes from the Newfounded Island, 1*l.*

'8 Apr. 1504. To a preste that goeth to the new Islande, 2*l.*

'25 Aug. 1505. To Clays going to Richmount with wylde catts and popyngays of the Newfound Island, for his costs, 13*s.* 4*d.*

'To Portugales that brought popyngais and catts of the mountaigne with other stuff to the king's grace, 5*l.*'

[2] Navarrete, vol iii. p. 41.

Portuguese seaman who followed Cabot was probably familiar with the fishing-grounds of the northern seas. As early as 1464, one John Cortereal, proprietor of Terceira in the Azores, is recorded to have visited the 'Terra do Bacalhao,' or 'Cod-fish Coast[1],' which at this date must be taken to signify Iceland. Gaspar Cortereal, his son, in 1500 followed the track of Cabot and the old Northmen, and reached Greenland. The voyages of the Cortereals are involved in even greater obscurity than that of Cabot. All that is certain is that Gaspar reached some part of the North American coast, that he did not return from a second voyage, and that a brother who went in search of him perished also[2]. The name of 'Cortereal's Land,' applied in some old maps to Nova Scotia, indicates the supposed locality of Cortereal's exploration. The Portuguese name 'Labrador,' or 'Slave-land,' said to have been given by him to the land of the Esquimaux south of Davis's Strait, is the only remaining memorial of these early Portuguese voyages. It indicates once more what was the main object of the explorer of the fifteenth century. Gold, and in default of it, slaves, were the only things worth carrying back to Europe: and lands which afforded no promise of either were quickly forgotten. It thus happened that the course of exploration ceased, and the extension of the name of America to the northern hemisphere was deferred. Yet one important link was created by these voyages. The grand Bank of Newfoundland was made known to the fishermen of Europe. Year by year the hardy Bretons and Basques, as well as the fishermen of England, now crossed the Atlantic, as they had formerly crossed the Gulf-stream to the fisheries of Iceland.

First English conception of America —The 'Four Elements.'

At this stage of the History of Discovery it will be interesting to the reader to contemplate the earliest contemporary English picture of the New World. The play or interlude of the 'Four Elements[3],' though probably

[1] Cordeyro, Historia Insulana, lib. vi. cap. 2.

[2] Osorius, De Rebus-Gestis Emmanuelis, lib. ii.

[3] This interesting work, which formerly only existed in the shape of an

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written between the years 1515 and 1520, is founded on ideas of an earlier time. It gives no hint of the discovery of the Pacific at Darien; and the circumnavigation

unique copy in the British Museum, has now been reprinted by Mr. Hazlitt in the last edition of Dodsley's Old Plays. It deals with Cosmography and other sciences of the day. *Experience* thus describes to *Studious Desire* the Atlantic ocean and the new lands beyond it:

'This sea is called the Great Ocean.
So great it is that never man
Could tell it, since the world began,
Till now these twenty year.
Westward be found new landys
That we never heard tell of before this,
By writing nor other meanys,
Yet many now have been there.
And that country is so large of room,
Much lenger than all Christendom,
Without fable or guile:
For divers mariners have it tried,
And sailed straight by the coast side,
Above five thousand mile.
But what commodities be within
No man can tell, nor well imagine.
But yet not long ago,
Some men of this country went,
By the king's noble consent,
It for to search to that intent,
And could not be brought thereto.
But they that were th' adventurers
Have cause to curse their mariners,
False of promise, and dissemblers,
That falsely them betrayed:
Which would take no pains to sail farther
Than their own list and pleasure:
Wherefore that voyage and divers other
Such caitiffs have destroyed.
O what a thing had been then
If that they that be Englishmen
Might have been the first of all
That there should have taken possession,
And made first building and habitation,
A memory perpetual!
And also what an honourable thing,
Both to the realm and to the king,
To have had his dominion extending
There into so far a ground,
Which the noble king of late memory,
The most wise prince the seventh Herry,
Caused first for to be found!

of the globe by the squadron of Magalhaens had not yet been achieved. The great feat, in the eye of the playwright, is the crossing of the Atlantic, and the coasting

O what a great meritorious deed,
To have the people instructed
To live more virtuously,
And to learn to know of men the manner,
And also to know God their maker,
Which as yet live all beastly!
For they nother know God nor the devil,
Nor ever heard tell of heaven or hell,
Writing, nor other scripture:
But yet, in the stead of God Almight,
They honour the sun for his great light,
For that doth them great pleasure.
Building nor house they have none at all,
But woods, and cots, and cavys small,
No marvel though it be so,
For they use no manner of iron,
Neither in tool nor other weapon,
That should help them thereto:
Copper they have, the which is found
In divers places above the ground,
Yet they dig not therefore,
For, as I said, they have none iron,
Whereby they should in the earth mine,
To search for any more.
Great abundance of woods there be,
Most part fir and pine-apple tree,
Great riches might come thereby,
Both pitch and tar and soap ashys,
As they make in the East Landys,
By brenning thereof only.
Fish they have in so great plenty,
That in havens taken and slain they be
With staves withouten fail;
Now Frenchmen and other have found the trade,
That yearly of fish there they lade
Above a hundred sail.
But in the south part of that country
The people there go naked alway,
The land is of so great heat:
And in the north part all the clothys
That they wear is but beast skinnys,
They have none other fete.
But how the people first began
In that country, or how they came,
For clerks it is a question.

. . . . . .

Book I. *Discovery.*

of the great land of America, which lies on the opposite side, for above 5000 miles. The play reflects, with a fulness and clearness which are in such cases extremely rare, the effect produced by the Discovery on the mind of Europe, and shows that the hope of a profitable commerce, and of the conversion of the native infidels to Christianity, was already formed in England. The writer, though a person of considerable learning, knows nothing of Columbus, or of the Spanish sovereigns. This new world was discovered by order of Henry the Seventh of pious memory: the navigator who discovered it was Americus, and from him it takes its name. It is called America: and the dimension of 5000 miles apparently identifies it as the America of the second stage of the Discovery, a vast land mainly lying in the southern hemisphere, and stretching from Honduras in the north-west to the southern extremity of Brazil in the south-east. But this dimension is inconsistent with the extent immediately afterwards attributed to the New World. It is described as extending, in an unbroken mass, from the torrid lands in the south, where the people go naked by reason of the heat, to the cold lands in the north, where the people go clothed in skins

> But these new landys found lately
> Been called America, because only
> Americus did first them find.'

The writer then proceeds to describe the situation of the new lands relatively to Asia. In the north-east of that continent there are many strange regions and unknown people:

> 'But eastward, on the sea side,
> A Prince there is that ruleth wide,
> Called the Can of Catowe:
> And this is called the Great East Sea,
> Which goeth all along this way,
> Toward the New Lands again:
> But whether that sea go thither directly,
> Or if any wilderness between them do lie,
> No man knoweth for certain.
> But these New Lands, by all cosmography,
> From the Can of Catowe's land cannot lie
> Little past a thousand mile:
> But from those New Lands men may sail plain
> Eastward and come to England again,
> Where we began erewhile.'

of beasts, and where there are great fisheries, frequented by the French and other nations. The aspect of the North American coast was well known. The woods which cover it are mainly of fir and pine, as well adapted for the manufacture of pitch tar, and soap ashes, as those of the Baltic: and the inhabitants, though ignorant of iron, are acquainted with the use of copper. All this indicates a knowledge of the continent in its full extent. The name of America is extended to the coasts in the northern hemisphere, and the dramatist connects the discovery of this great new land with that process of northern discovery which Henry the Seventh had promoted. The New World, he thinks, ought to have been at once formally occupied and colonised by the nation which discovered it. But it still was open to the English adventurer as a lawful field of enterprise. Henry the Eighth was at peace with Aragon and Castile: and by a treaty which had been concluded at London in 1515, the subjects of either crown might freely visit, whether by land or by sea, without license or safe-conduct from the other, all the ports and towns within the dominions of the other, without any exception, and might buy and sell merchandise of all kinds precisely on the same footing as the subjects of the other[1]. English sailors and merchants frequented the ports of Spain, under the protection of this treaty, in considerable numbers[2]: and the old dramatist here tells us that attempts had been made, with Henry's consent, to extend this intercourse to America. One of these had taken place shortly before the play was written. The crews, however, had proved mutinous, as in other voyages made for the same purpose, and the squadron had returned without reaching the New World. A few years later the attempt was repeated with better success. The Spaniards then resisted the claim of the English to trade freely with America. The English maintained their claim: and out of this dispute, as will be seen, grew the English colonisation.

[1] Dumont, vol. iv. part 1. p. 214.

[2] The hospital at San Lucar, founded by Henry VIII for English sailors in 1519, is still in existence.

Book I.

Discovery.

The Papal title repudiated in England.

A word of explanation should here be given with reference to the want of effect in England, though still faithful to the Catholic religion, of the Papal grant to Spain and Portugal. If an English seaman reached any uncolonised island, no grant from the Pope in favour of the Spanish and Portuguese would have hindered him from taking possession. From the time of Edward the First, it had been a fixed principle of English law and policy that the Bishop of Rome could not set bounds to or interfere with the authority of the English Crown. This principle was asserted in a long array of statutes; and a hundred years before the discovery of America, Englishmen had been provoked by Papal usurpation to a solemn assertion that no power on earth stood between God and the Crown, and the commons and the lords temporal had pledged themselves to defend the king's supremacy with their lives. The Crown of England, so runs the Statute of 1392, hath been at all times so free that it hath no earthly sovereign, but is immediately subject to God, and to none other, in all things touching the regalty of the said Crown[1]. Nor had this doctrine become a dead letter. The right which it asserted was one of the most cherished liberties of England: and the time was quickly coming when it would be pushed to its utmost by the abolition in England of the legitimate jurisdiction and prescriptive revenues of the Roman See. In this country, though sovereign and people were good Catholics, the Pope's Bull was waste parchment. The property in new lands discovered by Englishmen, whether within or without any meridian of demarcation, would be in the discoverer in perpetuity, subject to the paramount rights of the Crown: and the Crown could make a valid grant of new lands either before or after discovery. But though the Papal grant was void as against English discoverers, English law and policy respected the title of any one who in good faith had previously discovered new lands and had taken possession by entry: and hence the explorations of Eng-

[1] Statute of Praemunire, 16 Richard II.

lishmen were directed to latitudes which the Spaniards had not reached[1].

France and the Papal title.

The exclusive right of Spain and Portugal to the New World, so far as it rested only on the Papal grant, and not on discovery and occupation, was equally unrecognised in France. The Crown and Church of France, indeed, had led the way in resisting the Papal claims to universal sovereignty[2]: and in France, above all countries, the grant which apportioned the New World between Spain and Portugal was sure to remain a dead letter. The position of the French monarchy in Europe forbade it to acquiesce in the prospective aggrandizement of its most formidable rival. It had recovered that undisputed lead in Western Europe, which it had held during the Crusades. By arms, by diplomacy, and by marriage, it had won in all directions. The French king threatened not only to extend his conquests in the Netherlands, but to recover Naples and to annex Navarre. The victory of Marignano had gained him the Milanese, and with it a military fame which almost justified his promise of a new crusade. The promise was well-timed, for the Turks threatened Italy by sea and Hungary by land. Many held that the interests of Europe would be best served by electing Francis to the Empire, at the approaching vacancy: and a popular prophecy was current that Maximilian should be the last Emperor of German descent. But the union of the Spanish kingdoms with the widespread dominions of Austria raised a formidable obstacle to French ambition. The New World, as part of the Spanish inheritance, added something, though vague and indefinite, to the fortunes of Charles: but, whatever it might import, Francis easily invented a pretext for disputing it. When it became known in the ports of Normandy and Brittany that Cabot had visited the New Land in the far west beyond Greenland, the Norman and Breton fishermen,

[1] See Bracton, lib. ii. cap. 2: 'Si autem insula in mari nata sit (quod raro accidit), occupantis fit.' The doctrine relates to islands newly formed in the ocean, but it applies equally to islands newly discovered.

[2] Compare Milman, History of Latin Christianity, book xiii. chap. 13; Ranke, History of the Popes, book i. § 4.

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attracted by the reported abundance of cod-fish, speedily began to follow in his track. Those of other nations followed also, but the French were in the majority: and in the course of a few years the actual discovery of a considerable part of the coast was claimed for French subjects. That part of the coast which ran north and south was admitted by the French to have been discovered by the Portuguese. That which ran east and west, according to the nautical tradition, had been discovered by the Normans and Bretons: and the tradition was supported by the name of Cape Breton, universally applied to one of the promontories. When the New World grew in importance by the discovery of Florida and Mexico, the attention of the French monarch was more strongly drawn to those northern shores which were frequented by his subjects: and at length an open breach with Spain enabled him to assert an adverse claim [1].

French claim to the Northern Continent.

These voyages of the French fishermen, to the northern coasts called 'Terre Neuve,' 'The Newfound-Land,' or 'Tierra de Bacalhaos,' thus became the foundation of a claim to the New World on the part of France. No chapter in American history is more significant than that which has grown out of these claims. To them are due the first attempts to wrest the American continent and islands from Spain, attempts in which the French were pioneers to the English. As sovereign of Castile, Charles asserted an original right, based on the Papal title, to the whole continent and the islands adjacent, the only exception being Brazil, which lay within the boundary settled at Tordesillas. The French king claimed the Northern continent by right of discovery. The claim was utterly groundless, for Portuguese explorers, under Cortereal, had preceded the French in 1500, English explorers, under Cabot, had preceded the

[1] 'Discorso d'un Gran Capitano di Mare Francese del luoco di Dieppa,' printed in Ramusio (tom. iii. fol. 423). It was evidently written soon after the expeditions of Cartier in 1534 and 1535. The anonymous writer describes the first voyage to the New Land as having been made about thirty-three years before by Jean Denis in a vessel from Honfleur, Gamart of Rouen being his pilot: and mentions also a voyage of Thomas Aubert made in 1508 in a vessel belonging to Jean Angot, by whom natives of the country were first brought to France.

Portuguese in 1497, and the Norse explorers, though now scarcely remembered, had preceded them all. Neither England nor Portugal had grounded any territorial claim upon these voyages. Circumstances restrained them from doing so. The conflicting rights of Spain and Portugal in the New World had been settled by the treaty of Tordesillas: and England and Spain were as yet allied by every tie that can ally nations, including a common fear and jealousy of France. Hence the French claim, however ill-founded, remained undisputed by those who, if discovery could justify territorial claims, had the best right to dispute it. When the French had begun to enforce their claim by actual occupation, their geographers boldly wrote NEW FRANCE across the map of North America. Even this was not enough for French ambition. Before the century was over, the whole American shore was regarded as the Frenchman's heritage, and the southern continent was denominated ANTARCTIC FRANCE. Here, however, the attempts of the French came to nothing; in the Northern continent they long maintained a leading position, from which they were ultimately ousted by the nation whom they had pioneered [1].

Search for the Western passage revived.

Before the French king enforced his claim by actual occupation, the Spanish Crown had embarked on a new enterprise. While Pineda was coasting the Gulf of Mexico, another navigator in the Spanish service was laying plans for completing the great project of Columbus, which the discovery of the enormous barrier of the New World had suspended for a quarter of a century, and reaching the rich Indies and the Spice Islands by a westward voyage. This was Ferdinand Magalhaens, a Portuguese by birth [2],

[1] Though the French nation has since its great defeat in the last century almost relinquished the New World, it has left deep marks upon it, in a great French-speaking community in the British Dominion of Canada, in the French colony of Louisiana, now incorporated with the United States, and in that strangest of all political phenomena, the negro Republic of Hayti.

[2] Magalhaens was a native of Oporto. On quitting the Portuguese service for the Spanish, he changed his name to Magallanes. The reader of Camoens will remember the reproachful lines in which he is described as

'No feito com verdade
Portuguez, porém não na lealdade.'

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who had been for years engaged in the trade to the Portuguese Indies and the Spice Islands. Piqued by the refusal of Emmanuel to increase his pay, Magalhaens had quitted the Portuguese service, and sought that of Spain, with the avowed object of revenging the affront by showing the Spaniards the long-sought way to the Spice Islands. This Magalhaens proposed to do by conducting the Spanish vessels round the southernmost point of America.

De Solis reaches the Plate River, 1515.

Since the publication of the voyages of Vespucci, something, but not much, had been done to extend exploration southward of Brazil. Stimulated by the success of Velasquez and Ponce de Leon in Cuba and Florida, Ferdinand had planned further explorations beyond the Portuguese boundary, in the south. The double quest, of lands rich in gold and pearls, and of the strait leading to the South Sea, was now prosecuted in this direction, as the colonists of Cuba were prosecuting it in the Gulf of Mexico: and the task was entrusted to Juan Diaz de Solis, one of the companions of Columbus, who, as the reader may remember, had been associated with Vincent Pinzon in exploring the Gulf of Honduras in 1506, and the coast of Brazil in 1508. Solis was the most eminent navigator then living; and on the death of Americo Vespucci had succeeded him in the office of Piloto Mayor of Castile. He sailed from Lepe in October, 1515, and reached the mouth of the great Plate River, where he and several companions were slain by the Indians in the attempt to secure a specimen to be carried home to Spain[1]. His lieutenant pursued the voyage no further, and returned to Spain with a cargo of Brasil-wood and seal-skins. The enormous river which had been discovered seemed to indicate that the continent extended

[1] Navarrete, vol. iii. pp. 50, 134; Colleccion de Documentos ineditos para la Historia de España, vol. xv. p. 21. By his contract with Ferdinand, which was approved at Mancilla, November 24, 1514, he agreed in consideration of 4000 ducats, out of which he was to pay the expenses of the armada, to sail with three ships for a distance of 1700 leagues and more if possible, from Darien, to the east and south, and to ascertain whether there existed any strait communicating with the South Sea. The place where Solis perished was on the south shore of the river, near the Isla de Martin Garcia.

much further to the southward, perhaps to the south pole itself. It might be that the sea which had been reached by crossing the isthmus of Darien had no communication with the Atlantic, and that nature had thus severed the East from the West. Such, however, was not the belief of Magalhaens, who confidently cruised along this shore until he reached the outlet which bears his name.

Plan of Magalhaens.

How, it may be asked, could Magalhaens know that to the south of Brazil there existed a passage leading to the Indian Ocean? In planning this celebrated voyage, which ranks after the famous voyages of Columbus and of Vasco Da Gama as the third great maritime enterprise of history, Magalhaens was not guided by the speculations of the ancients, like Columbus, nor by the slow accumulations of nautical experience, like Vasco, except in so far as nautical experience pointed to the non-existence of a strait leading to the Indian Ocean in the northern hemisphere. If nature had effectually closed the north, it was still possible that the door was open in the south. It was not only possible indeed, but probable. The cosmography of Ptolemy had barred the path from the Atlantic to the Indian Ocean, by extending Africa to the South Pole. Recent experience, however, had refuted Ptolemy, and proved that Africa terminated in a cape, by rounding which the voyager reached the Indian Ocean. Magalhaens had often rounded this cape; and from its existence he argued the existence of a similar cape in the New World. The analogy upon which he reasoned was not of his own invention. The reader is aware that the belief in some symmetrical arrangement of the oikoumenai on the surface of the sphere was as old as Cicero. After the discovery of the New World, observers were ever on the watch for some resemblance in its contour to that of the old. The outline presented by both to the Atlantic, it was observed, ran mainly north and south, though broken by large indentations. Each was terminated on the north by broken islands or peninsulas, extending beyond the Arctic Circle. At the southern extremity the Old World terminated in a cape, by rounding which it was found that the Indian

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Ocean was gained. What could be more probable, than that a similar cape should exist at the southern extremity of the New World[1]?

Magalhaens strikes for increased pay.

The Portuguese had been quicker than the Spaniards in taking possession of the inheritance to which they were entitled under the Papal grants, as modified by the Treaty of Tordesillas. Under the able direction of Albuquerque, the Portuguese explorers in the east had gone straight to their end. They had effected a lodgment on every shore of the Indian Ocean where a lodgment was worth making, and above all, they had established themselves in the famous spice islands of the Indian Ocean, lying in the farthest east, and known as the Moluccas. The profits of the Indian trade were enormous, and the revenue of the Portuguese monarch had been greatly augmented by this increase of dominion. The increased prosperity of Portugal reacted in the usual way. Prices increased with the greater abundance of money: and the salaried officers of the Portuguese crown found their pay insufficient for their needs. In these circumstances, Ferdinand Magalhaens petitioned Emmanuel to increase his pay by half a ducat a month. Emmanuel refused, on the score that all the rest of his servants would claim a similar rise in wages: and Magalhaens, who had served Emmanuel bravely both as a soldier and a sailor, quitted his service in disgust, and went to Spain to take his revenge. This was nothing less than to rob Emmanuel of the Moluccas by convincing Charles the Fifth that these islands were in fact included in the Spanish moiety of the sphere. Such was the miserable origin of the celebrated voyage of Magalhaens, in which the southernmost point of the American continent was first reached, and the earth-sphere was first circumnavigated. The claim was not unspecious, as the reader may prove with the brazen meridian of an ordinary globe: and in the then state of means of finding

[1] It should be added, that Magalhaens, in searching for the desired strait in the South, was following the track of the eminent seaman Solis four years before. The argument from analogy of shape in the two worlds dates at least from the beginning of the century, and may be found in its extreme form in the map of Juan de la Cosa, 1500.

the longitude there were no means of absolutely proving or disproving it.

Magalhaens in Spain.

In Spain, the project of Magalhaens met with a reception not unlike that which the famous Columbian scheme, of which it was in fact the completion, had received thirty years previously. Magalhaens had a companion, one Christopher de Haro, a malcontent merchant of Lisbon. The project was explained by them to the Emperor and his Council, to whom, says one of the councillors in a contemporary memoir[1], it seemed a vain thing, on account of the uncertainty of being able to pass and sail to the spice islands of the Moluccas by the parts of the west. Wise Nature[2], they supposed, which providently ordained all things, had separated the east from the west. Peradventure that mighty continent which the Spaniards had discovered was continuous and had no termination, and thus parted and distinguished the western from the eastern seas. Our seamen, they argued, have surveyed and found that this continent extends far to the south and to the west without any termination. Also they have discovered other two lands towards the north, one called the land of the Bacallaos, from a certain sort of fish so called which are there to be found, and the other the land called Florida: and if these two lands are continuous, and joined with the mainland, it is impossible to believe that there is a passage to sail by way of the west to the parts of the east, which passage hath been sought with much diligence and great labours, but never found. Hence, says the councillor, the Emperor and his Council pronounced the project of Magalhaens and Haro a matter of much hope, but also of much difficulty: and they dissembled with them, putting them off from day to day, in order to obtain greater certainty from some other source[3].

[1] Maximiliano Transilvano, 'Relacion de cómo y por quien y en qué tiempo fueron descubiertas y halladas las Islas Molucas' (5th October, 1522), printed in Navarrete, vol. iv. p. 249.

[2] 'La ingeniosa natura, qué todas las cosas constituyó con suma providencia.' I have extracted somewhat copiously from the text, on account of its singular interest.

[3] Navarrete, vol. iv. p. 255. From this passage it clearly appears that the

Book I. *Discovery.* Magalhaens discovers Patagonia, 1520.

Magalhaens and Haro, however, pressed their scheme, and declared themselves willing to execute it at their own costs: and in the end Charles yielded. On the 10th of August, 1519, five ships equipped and manned at the Emperor's expense sailed down the river from Seville with the object of coasting and verifying the South-American shore southwards beyond the latitudes already known, to find the Cape or end of the continent, and the great passage leading to the South or Pacific Sea, by which to reach the Moluccas[1]. It was on the 8th day of December that the shores of Brazil were sighted, in the 20th degree of South latitude. The instructions of Magalhaens forbade him to land in the dominions of Portugal, but he put in at Rio Janeiro. On the 10th of January he reached the Plate River, then known as the Solís River, from the unfortunate explorer who had perished on its shores, and bestowed on the mountain on its left bank the name of Monte Vidi[2]. Magalhaens carefully surveyed the enormous embouchure of the Plate River, in order to make sure that it was not the strait of which he was in search. With similar care he scrutinised every bay in the coast beyond. It was a dull and tedious cruise along a low, sinuous, and for the most part barren coast, occasionally varied by a bold promontory like Cape Corrientes, or an inland mountain like the lofty Ventana. Magalhaens was two months in reaching a shelter suitable for winter quarters. It was the dreary inlet called Port St. Julian, where Drake wintered fifty-eight years afterwards. Magalhaens spent two months in Port St. Julian, where he had to crush a serious mutiny among his followers[3]. Here the expedition was visited by the natives, clothed in skins and armed with

continuity of the Northern continent was regarded by the Imperial Council in 1518 as almost a certainty.

[1] The expressions are those of Maximilian. For the 'Instruccion' to Magalhaens, date May 8, 1519, a bulky document containing 74 clauses, see Navarrete, vol. iv. p. 130.

[2] Now corrupted into Monte-video. From the expression in the Log, written by Francisco Albo, Navarrete, vol. iv. p. 211, it would appear that Monte Vidi meant 'Hat Mountain.'

[3] Two of the captains were executed. The execution of Thomas Doughty, during Drake's winter sojourn, forms a curious parallel.

bows, and of more than ordinary stature: the Spaniards gave them the name of Patagones or 'Big-feet[1].' On the 26th of August, 1520, he reached the Santa Cruz River, having now passed the fiftieth parallel of latitude. Magalhaens, having now begun the second year of his cruise, and reached perilous latitudes, for in the Santa Cruz River his armada was nearly wrecked, promulgated fresh instructions to the captains under him. The coast, he declared, must be followed to its end. They were now above 50° south of the equator. He was determined not to abandon his design until they had reached the parallel of 75°, and until the ships had been twice new rigged[2].

Magalhaens reaches and passes the Strait.

The resolution which Magalhaens now expressed was firmly maintained. On the 18th of October he quitted the Santa Cruz River, and spent two days coasting against the wind. He was now near the accomplishment of his object. The next day, being now in 52° latitude, and five leagues from land, he sighted the distant Cabo de Las Virgenes rising above long banks of sand. Before rounding it, he cast anchor, and sent two of his captains to reconnoitre, directing them to return within five days. The two captains gave different accounts. The commander of the Concepcion reported nothing but a deep river: the commander of the San Antonio averred the supposed river to be in fact the long-sought strait. He had sailed up it, it appeared, for three days, and found nothing resembling a river's mouth. Magalhaens sent him back to reconnoitre anew, upon which he sailed up the strait for fifty leagues, and returned with the tidings that it was undoubtedly the strait in question. The explorer and his captains now took counsel together. They had provisions left for three months: but opinion wavered as to the prudence of passing the strait and completing their task. Stephen Gomez, a Portuguese, the pilot of the San Antonio, spoke against it. He urged, that the strait having

[1] Pata, foot; patagon, large clumsy foot.

[2] 'Que antes de retroceder de esta empresa se le habian de desaparejar los naos dos veces.' Navarrete, vol. iv. p. 42. Cook penetrated into the ice-fields of the Antarctic as far as 71° 10′; Weddell, in 1823, reached 74° 15′.

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been thus undoubtedly discovered, the proper course would be to return to Spain, and procure a new squadron: that the passage was long and perilous, and in case of continued calms or storms, all on board might perish. Magalhaens, however, with a determination worthy of Columbus himself, swore that even if they had to eat the cowhide that cased their ships' yards, they should go on, and complete the discovery which they had promised the Emperor[1]. Therewith, it is said, he forbade anybody to allude to the condition of the vessels and stores on pain of death, and ordered all to be made ready for entering the strait on the following day. The passage occupied twenty days, in the course of which no human being was descried on either shore. Its estimated length was a hundred leagues. Though no inhabitants were visible, the land on the south appeared in the night studded with fires: hence the explorers gave it the name of Tierra del Fuego. On the 27th of November Magalhaens reached the end of the strait, and found himself in the ocean which the colonists of Darien had called the South Sea, but which, from the continued fine weather which he experienced, he named 'Mar Pacifico,' or the 'peaceful ocean[2].'

The Southern Land, or 'Terra Australis.'

The passage by which Magalhaens had passed from the Atlantic to the Indian Ocean was utterly unlike the corresponding passage in the other hemisphere round the Cape of Good Hope. It was not, like the latter, a headland washed by the ocean and forming the termination of a continent, but was a narrow strait, apparently separating two continents, the shores of which presented a remarkable

[1] Herrera, Decade II, Lib. ix. ch. xv. I do not ordinarily use the compiler Herrera as an authority: but this touch is too characteristic to be doubted.

[2] Navarrete, vol. iv. p. 50. The remainder of this celebrated voyage does not belong to American history. The following are the dates of its principal incidents: Islas de los Ladrones (Thieves' Islands, so called from the thieving natives who surrounded the ships, now the Marianas) reached, March 6, 1521; Philippines reached, March 16; Magalhaens killed by a spear in an attack made by the natives of Zebu, April 27; Borneo reached, July 8; Moluccas sighted, November 8; left Tidore, December 21; left Timor early in February, 1522; Cape of Good Hope in sight, April 17; arrival at San Lucar, September 6, three years all but fourteen days after sailing, after circumnavigating the globe, and making a total course by the ships' reckonings of 14,000 leagues.

uniformity. Of breadth varying from one to four leagues, with many changes in direction, they were ever parallel, and of like aspect. Ranges of mountains rose on either side, one behind the other, from intermediate masses of cloud. The highest peaks were covered with snow. The traveller had apparently reached the end of one continent and the beginning of another: a theory which accorded with current ideas in more than one way. It confirmed the original conception of the communication of the Atlantic and Indian Oceans by a strait. Such had been the idea of Columbus, based on the Strait of Malacca, through which he had expected to reach the mouth of the Ganges. It confirmed the analogy of the New and the Old continent in respect of their southern termination. And it confirmed the Greek conception of a southern oikoumenê, which the voyages of Americo had revived. The Terra Firma of South America was proved to be isolated from what seemed to be a great continent lying wholly in the southern hemisphere, and separated by the Indian Ocean from Africa and the Indies. For two centuries and a-half, reckoning from Magalhaens' voyage, such a land was believed to exist. It was called TERRA AUSTRALIS; a fictitious continent, the existence of which it was reserved for Cook to disprove[1].

The westward voyage to the Indies accomplished.

Magalhaens and his companions crossed the Peaceful Ocean and reached the Indian Archipelago; and thus was completed, in the month of March, 1522, that historical process which had been begun in the quick brain of the nameless Greek who two thousand years before had suggested sailing from Spain to the Indies by a westward voyage. The obscure seaman by whom the project had been revived, after twenty years spent in maturing it, in procuring the means of executing it, and in partially carrying it into execution, had died without seeing it accomplished, though he fondly cherished the contrary belief[2].

[1] In Varenius, Geographia Generalis, sec. 3, ch. 3 (1650) we find the curious statement that Terra Australis was the only continent that had hitherto been circumnavigated.

[2] Columbus never doubted that the lands discovered by him were continuous with the mainland of Asia. Strictly examined, his illusion was not so ill-founded as appears at first sight, for the absolute discontinuity of Asia and

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He had now been sixteen years mouldering in the grave, and his name was well-nigh forgotten. But it was his genius and his persistency that ultimately brought the dream of twenty centuries to pass. To him it was due that Eastern Asia had at length been reached, by a vast circuit, in a westward voyage from Europe. This result, brilliant as it was, was obscured by the striking results which had been wrought out in attaining it. The Atlantic Ocean was no more a mystery. There was a mighty apocalypse in geography. A new continent, bounding the Atlantic on the west, and reaching from the Arctic circle almost to the Antarctic, had been revealed, and its coasts, peopled by strange and savage races, had been traced in their whole extent. Islands, not less rich in gold and pearls than those of the Eastern archipelago, had been found near its shores. Half-way in its length, vast mountains had been crossed, and a new ocean had been discovered on the other side. A strait leading to this ocean had at length been discovered at the southern extremity of the continent, the new ocean had been crossed, and the Old World regained at its eastern extremity. The original project of Columbus was thus brought to a successful issue after thirty years spent in patiently groping round the margin of that stupendous barrier upon which he had stumbled.

Francis roused to activity by this event.

It was natural that the return of the squadron of Magalhaens in September, 1522, should rouse the King of France to activity. The feat that had now been accomplished was more striking in the world's eye than the discovery of the New World, of which it formed the natural complement; and it was scarcely inferior to it in historical importance. The dream of two thousand years had been realised. The Portuguese had been outdone, for Cathay and the Eastern Archipelago had been reached by a westward voyage from Europe, that great New World which had stopped the way of Columbus being passed on the South, as the Portuguese had passed the Old World on the South. The credit and the benefit of this great feat

America was left unproved even by Bering and Cook, and has only been demonstrated in our own time.

belonged to the French king's enemy, and it foreshadowed a great increase in that enemy's power in the New World and in the remote East. Francis could not suffer this to take place without a struggle; and accordingly he turned his attention to the Northern hemisphere. The Spaniards had neglected it, but with some parts of it his own subjects were familiar. The Emperor had caused the South-western passage to be discovered; why should not the King of France open the North-west passage?[o] It was true that the general sense of navigators was against the existence of such a passage, at least in navigable latitudes. But an expedition ostensibly sent in search of such a passage might explore those unoccupied shores in the Northern hemisphere which barred the navigator's way, and thus lay the foundation for future territorial claims: and whatever the event, such an expedition undertaken by the French king could not fail to alarm and annoy his Imperial rival. Such an expedition was accordingly resolved upon.

Continuity of Florida and the 'New Isle,' when ascertained.

Before detailing the incidents of the voyage by which the French monarch designed to confirm his claim, which happens also to be the first recorded voyage along the coast of the United States, it should be premised that all the circumstances of that voyage point to the conclusion that the continuity of Florida with the 'New Isle' reached by the English, Norman and Breton sailors was then already known with almost absolute certainty. At what date it became certain cannot be determined, from the very nature of the case; but it must have closely followed on the discovery of Florida. There can be no doubt that in these early years many voyages were made to the shores of the New World, of which no record remains; and such was especially the case where the shores visited, as here, afforded no promise of gold. But besides the quest of gold, these voyages were undertaken in search of that strait, leading by a western passage to the Indian Ocean, which had been sought ever since Columbus reached the great barrier of the American shore. The page of history is not long encumbered with the records of unsuccess, and no record

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survives of many fruitless searches made for this passage between Columbus and Magalhaens. But the negative evidence as to the desired strait, which thus accumulated, rapidly grew into positive evidence of a continuous shore; and the search for a western passage in the northern hemisphere was abandoned. Half a century later, indeed, it was revived by Frobisher, who advocated the wild scheme of reaching China by sailing to the north of Labrador. A general belief in the continuity of the North American shore at the time when the Gulf of Mexico had just been coasted by Pineda is clearly indicated by the fact that when Magalhaens in the next year (1519) sailed on his famous voyage for discovering the westward route to the Indies, he laid his plans for passing not to the north, but to the south, of the New World. Had the continuity of the coast between Florida and the 'New Isle" been then a matter of doubt, Magalhaens would probably have attempted the western passage by the shorter route in the Northern hemisphere. As the reader is aware, the route of Magalhaens, though primarily determined by other considerations, was in fact secondarily determined by the assumption that all reasonable expectation of passing to Cathay and the Spice Islands by the northern route had then vanished. This celebrated voyage completes the history of the Discovery of South America on the Atlantic side: and in order to complete the history of the Discovery in its main features it only remains to describe the voyage along the Northern shore made by order of the French king, being the first voyage along the North American shore of which any record has been preserved. Though it took place in 1524, the narrative will serve to indicate what had met the eyes of previous explorers, and may be taken as summing up matters of knowledge which had for some years existed in vague detail. It was the result of a breach between the Spanish and French monarchs: and is therefore interesting, among other aspects, as representing the first occasion on which the political complications of Europe crossed the Atlantic and affected the fortunes of America.

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Greater than the growth of discovery by Spaniards in America, had been the progress of the fortunes of the Spanish monarchy in Europe. Charles the Fifth was now on the throne of Castile and Aragon, and was also sovereign of Naples and Sicily. By the death of his grandfather Maximilian in 1519, he inherited Austria and Burgundy, and became presumptive successor to the Empire. To this dignity he was in due time elected, against Francis of France as a rival candidate. Though the claim of the French monarch, coldly supported by only one of the Electors, was no serious obstacle, Charles regarded the result as a victory: and the motto 'Plus ultra,' which he assumed on his election, was pregnant with meaning[1]. The triumphs of the Austrian house were not over. An European struggle impended, in which Charles threatened to destroy the ascendancy of Francis: and the latter monarch, if not seriously alarmed at the rapid advancement of his neighbour, certainly piqued by the check which it gave to his own ambition, resolved to provoke war with him before his power was consolidated[2]. A pretext was easily found, and the war begun in the Pyrenees. It was afterwards transferred to Italy, where it was terminated in favour of Charles by the battle of Pavia in 1525. Before that catastrophe, by the orders of Francis, an Italian seaman had sailed along the whole North American coast from Florida to the 'New Land' in the north, and taken possession of it in the name of Francis.

Breach between Spain and France.

The Spaniards had not left the eastern coast of Florida unvisited. It was peopled by a hardy race, who made excellent slaves for the Spanish mines and plantations. In 1520, one Lucas Vasquez de Ayllon had sailed far along it in search of slaves, and had reached a land which bore the name of Chicora. No permanent settlement, however,

Verrazzano explores the North-American coast.

[1] The two Pillars of Hercules, with the new Imperial motto attached, in allusion to the trans-oceanic acquisitions of Spain, are soon afterwards employed to support the Imperial arms. See the title-page of M. Mauro's 'Sphera Volgare novamente tradotta,' 1532. We have here the origin of the celebrated device chosen by Bacon to symbolise his system of philosophy.

[2] See for the rivalry of Charles and Francis, the articles of M. Mignet in the Revue des Deux Mondes, 1866 and 1867.

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had been ever attempted. The French monarch, relying upon the general right of discovery and occupation, was resolved to claim the whole line of coast from the parts reached by the Spaniards in the south to the New Isle in the north; and he entrusted the task of formally taking possession to one Giovanni da Verrazzano, a Florentine. The design, as the reader knows, was masked under the pretence of renewing the search for a north-western passage to Cathay. Verrazzano was directed to make the mainland of Florida, and thence to coast northwards as far as the fifty-fourth parallel. It was in the autumn of 1523 that he quitted the narrow harbour of Dieppe, and stood out to sea with four vessels[1]. Foul weather in channel obliged him to run for a Breton port, and it turned out that with one exception his vessels were unfit for the proposed voyage. The French monarch's design, however, admitted of no delay, and Verrazzano proceeded in the Dolphin alone. He took the southern route, sailing by way of Madeira, and quitted the northernmost of the Desertas, his last anchorage in the old world, on the 17th of January, 1524. Taking the course still followed by dull-sailing vessels bound from the English channel for North-American ports, Verrazzano sailed on a bowline curving southward from Madeira and turning northward from about the fifty-fifth degree of longitude. He encountered rough weather, and the month of March was half over before he descried land. It was the low sandy coast of North Carolina, trending north and south. Verrazzano sailed first south and then north, but could descry no harbour: he therefore anchored out at sea, and landed in an open boat. The friendly reception given him by the simple Indians, whose fires at night had been seen in the distance, seems to indicate that he was far to the

[1] I disregard the doubts which have been cast upon the narrative of Verrazzano. It must not be judged by the version of Ramusio, who omits all the voyager's geographical observations, and unpardonably garbles the conclusion, by removing the original statement that Verrazzano was compelled by failure of stores to return on reaching 50° N. latitude, and substituting a statement that he returned as soon as he reached 'the land formerly discovered by the Bretons.' The narrative as it is found in the MS. in the Magliabecchian library (see post, page 242) is consistent with itself and with the contemporary state of geographical knowledge.

north of the coast hitherto reached by the slave-hunting Spaniards. After taking possession in the name of Francis, Verrazzano pursued his course, coasting to the north. The shore was covered with red sand, sloping upwards in tufted hillocks, like the dunes of Holland, to a height of fifteen feet: here and there it was broken by a river or a creek. Indian fires were visible after nightfall. Further on the land in the interior disclosed itself in low undulations, partly covered with trees, which here and there thickened into forests; not however, as he observed, the rough and forbidding forests of northern latitudes, but forests of laurel, palm, and cypress, emitting a fragrance which reached the voyagers, and seemed laden with the promise of Oriental spices and gold. As Verrazzano coasted along towards Cape Hatteras, the coast, judging from the numerous fires, became more densely peopled. It was still sandy and importuous, and the surf too heavy to permit a boat to land. One young sailor, eager for gold, swam ashore, carrying a supply of the poor trifles for which the Indians were usually ready to exchange their gold ornaments. But the precious metal was here unknown, and the young sailor came empty away.

Verrazzano coasts Virginia and reaches the Hudson river.

From the sandy spit of Cape Hatteras the shore seemed to trend more to the north, and the voyagers beheld what seemed a land of greater promise. Thick forests still covered the hills: and for a distance of thirty leagues between them and the sea there stretched out vast prairies, covered with luxuriant verdure and wild flowers. Planted with corn and olive, it seemed to Verrazzano that this land might become a second Lombardy. It was Virginia, the garden of America, and destined one day to become famous throughout Europe as the seat of an English colony. Passing the capes which mark the entrance to the Chesapeake, Verrazzano sailed a hundred leagues more to the north. Passing the entrance to Delaware bay, Verrazzano reached a more thickly wooded coast, which was succeeded by a low tract of table-land. Beyond, in the distance, the highlands of Navesink must have met his eye; and at length the Dolphin reached Sandy Hook and the mouth

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of the Hudson. He had now reached what seemed to him an exceeding pleasant situation among small rising hills, in the midst of which there flowed to the sea a considerable river, apparently deep enough at the mouth to enable vessels of large size to enter with the aid of the tide. Verrazzano, however, rowed up in his ship's boat. The Indians flocked to meet him, indicating by gestures a convenient landing-place about half a league from the mouth. Here the river formed a picturesque lake about three leagues in circuit, and it was quickly dotted over with the canoes of Indians flocking to the landing-place of the strangers. It was the harbour of New York, now probably for the first time entered by European seamen. Verrazzano's stay here was cut short. The wind changed, and the explorers had to return suddenly to the ship, greatly to their chagrin, for the hills of New Jersey seemed to promise gold. The anchor was weighed, and once more the Dolphin proceeded on her cruise.

Continuation of Verrazzano's coasting voyage.

A run of fifty leagues brought the Dolphin to a triangular island ten leagues distant from the mainland. The island, which Verrazzano compared for size to Rhodes, was Martha's Vineyard[1]. Without landing on it, the explorer crossed to the opposite shore, which trended from west to east, having to the south an opening of half a league in breadth. Entering by this opening, and passing between two hilly shores, whence many streams descended to the sea, Verrazzano found himself in a spacious bay, in the midst of which could be counted five beautiful and fertile islets. It was the famous harbour of Newport, or Rhode Island. The natives flocked around in their canoes: and the voyagers were struck by their elaborate dress, their noble bearing, and their superiority to the Indians of the south in the arts of life. They did their best to furnish the ship with necessaries: and Verrazzano on the 5th of May continued his voyage, after noting that this desirable land lay in the parallel of Rome, in 41⅔ degrees of north latitude. The season was advancing, and his task was as yet

[1] I follow Hugh Murray. Mr. Cogswell, the American editor of the narrative, identifies this island with Block Island.

not nearly completed. He sailed on for an estimated distance of 150 leagues, finding the shore still of the same character, but more elevated, and mountainous. It was the coast of New England. The mountains seemed to give promise of gold: but Verrazzano hastened on, anxious to complete his task. The character of the coast now changed. Verrazzano reached a land with hilly shores, covered with dark dense forests, similar to those in the northern latitudes of Europe, and inhabited by a wild race of unfriendly demeanour. This was the coast of Maine. Passing on in a north-easterly direction, Verrazzano reached a more attractive land, open and without forests, with lofty mountains in the distance. Lying in the sea near to this coast, he counted thirty-four small islands, separated by winding channels, which reminded him of the beautiful islands in the Adriatic, off the coast of Dalmatia. Passing these islands, which were those of the bay of Penobscot, and sailing still to the north-east, Verrazzano cruised as far as 50 degrees of north latitude. His stores now failing, he sailed for France, having, in his own words, discovered seven hundred leagues and more of new coast.

Verrazzano in France.

Verrazzano put into Dieppe, from whence he had sailed seven months before. The fortunes of his royal employer had meanwhile declined. The Constable of Bourbon had changed sides, and with the Imperial general Pescara was at the head of an invading army in Dauphiné. Francis had marched thither to face him in person, and the royal head-quarters were at Avignon. Thither Verrazzano proceeded, carrying with him a narrative of his cruise, dated on board the Dolphin at Dieppe, July 8, 1524. At Lyons he visited a fellow-citizen of Florence named Bernardo Carli, established there as a merchant, whom he acquainted with his adventures and permitted to take a copy of his narrative. Thence he set out for the royal head-quarters, in hopes of being again despatched to the New World in command of a larger and better squadron. Here we lose sight of the Florentine explorer, whose stay at Lyons, as it happened, saved his narrative from destruction. Bernardo Carli despatched to his father in Florence the copy which he had

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taken, accompanied by a letter giving further particulars of the explorer, his feats, and his plans, and suggesting that the father should communicate them to Francesco, another of the Carli family, then resident at Cairo, and in high repute as a mercantile traveller. If Francesco, suggests Bernardo Carli, would return, and join Verrazzano on his second voyage, he might probably establish a profitable commerce with this New World, which is now ascertained to be as large as all Europe and Africa, together with the western parts of Asia. This letter, and the copy transmitted with it to Florence, preserved Verrazzano's adventures from oblivion. The original narrative presented to the French king perished in the campaign. But Carli's epistle, and the copy of Verrazzano's narrative sent with it, were safely preserved at Florence, whence the latter ultimately found its way to Ramusio at Venice[1].

Verazzano's voyage presumes a knowledge of the continuity of the coast.

In the whole narrative of Verrazzano nothing whatever occurs to indicate any doubt as to the general bearing of the coast he was examining. On the contrary, he was obviously aware that by following the coast from Florida northeastwards he would ultimately reach the coast formerly discovered by the Portuguese, which was reputed to lie in fifty-four degrees of north latitude, and his voyage did but confirm expectations previously entertained. He therefore scarcely deserves the credit of an original discoverer. Presuming the truth of the report given by Cabot of his voyage in 1497, that he sailed south for 300 leagues, finding the coast still trending in that direction, it may be said that nothing was necessary to the discovery of the outline of America in the northern hemisphere but the discovery of Florida, and the proof of its continuity with Yucatan and the southern Terra Firma. The voyage of

[1] Copies of Carli's letter, which is dated August 4, 1524, and of the Verrazzano narrative, are in a MS. volume in the Magliabecchian library at Florence. The writer has carefully examined them, and compared the narrative with the version of Ramusio. The MS. version of the narrative is printed in the Transactions of the New York Historical Society, second series, vol. i, with a translation by Mr. J. G. Cogswell; but the Carli letter has remained hitherto unnoticed. Verrazzano made a second voyage to America, and never returned. Ramusio says that the explorer and his companions were killed by the natives; but Mr. Harrisse has shown that Verrazzano was hanged as a pirate in Spain.

Pineda in 1518 might thus be described as the finishing stroke, for the present generation, to the process of discovery in the northern hemisphere. But Verrazzano's voyage, six years later, afforded positive proof of what had hitherto been known only by negative evidence. It proved the New World to be a solid continent, occupying about an equal extent on the meridian in both hemispheres: and Europe remained for the present content with the westward passage to Cathay which had been discovered by Magalhaens. It remained for Englishmen, two generations later, to carry the process further, and to brave the toils and dangers of the frozen seas in search of a North-west passage.

The term 'New World' applied in its widest sense.

The Discovery of the New World in its principal dimension, that from North to South, was thus approximately completed. That continental shore, which Columbus had first seen over against Trinidad in 1498, had now been traced in its whole continuity from the Strait of Magalhaens in the south to the Gulf of the St. Lawrence in the north. What might be its dimensions on the parallels of latitude could only be conjectured[1]. If its internal dimensions, writes Verrazzano, are proportionate to the length of the coast, it is undoubtedly larger than Asia[2]. Some think, writes Carli, that if traced farther it would be found to adjoin Norway; and it is reasonably calculated that it is larger than Europe and Africa, together with the western part of Asia. Undoubtedly therefore is it a New World; and this without reckoning the discoveries which have been made by the Spaniards under Magalhaens to the west of it[3]. The name 'New World,' applied by Peter Martyr to the West Indian islands thirty years before, and in a wider

[1] It is true that it had been crossed at the Isthmus of Darien; but the South Sea which had there been reached had not yet been identified with the Peaceful Sea of Magalhaens, and it was possible that it might prove to be a quasi-Mediterranean sea like that on the other side of the Isthmus.

[2] 'Se lo equestre (agreste ?) di detta terra in parte corresponde al lito maritimo, non v'e dubbio di grandesa la Asia excede.' Narrative in the Florentine MS., omitted in Ramusio.

[3] Florentine MS., fol. 12: 'Una latitudine di terra di tanta grandezza che secondo le buone ragioni et gradi per latitudine et altezza assegnia et mostra più grande che la Europa Africa et partè di Asia. ERGO MUNDUS NOVUS: et questo senza lo che anno discoperto in più anni li Spagniuoli per lo occidente,' &c.

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application popularised by the narrative of Vespucci as the name of a vast island lying mainly to the south of the Equator, was thus applied for the first time in its fullest extent by the Italian merchant of Lyons. It was used by him, as it has been used ever since, to denominate the great continent of America, as that continent is known at this day.

NOTE TO PAGE 172, *ante.*

Although there are great discrepancies between the reputed portraits of Columbus, and although none exists which can be accepted as an original portrait painted in the lifetime of the discoverer, a comparison of the earlier ones leads to the conclusion that in the sixteenth century there was current a distinct conception of the discoverer's person, according to which he was a stoutly-built man, with an oval face, a high forehead, from which the hair was simply combed back, high cheek-bones, moderately prominent eyes, aquiline nose, small mouth and lower-jaw, and full lower lip. The face was completely shaven. All the paintings which agree in supporting this general description represent him in an ordinary civil dress, consisting of a closely-fitting cloth tunic, showing at the throat a narrow margin of linen, and a loose cloak thrown over the tunic. A remarkable woodcut in the 1575 edition of the 'Elogia Virorum Bellicâ Virtute Illustrium' of Paulus Jovius, Bishop of Nocera, who is known to have had in his gallery at his death in 1552 a portrait of Columbus, represents him in the coarse cape of a Franciscan monk, which he is known to have worn in his last years. The features correspond with the description above given. Among the pictures on which this is founded may be mentioned the so-called 'Yañez' portrait in the National Library at Madrid; the well-known one in the Uffizi Gallery at Florence; and the Cuccaro panel portrait engraved in Napione's 'Patria di Cristoforo Colombo.' The dress and general appearance are approximately preserved, though the features have undergone alteration, in several later portraits, of which a well-known engraving in Capriolo's 'Ritratti di Cento Capitani Illustri' (1596) may be taken as a specimen. There are many portraits of still later date, in which the true features are quite lost, and the discoverer sometimes appears with beard and mustachios, with hair elaborately dressed in various styles, in a suit of armour, with or without a ruff, collar, and chain, and carrying a bâton, globe, or astrolabe. All these are merely fancy pictures. The fine picture, presented to the City of Genoa in 1862 by the Commendatore Cevasca, which is exhibited in the Municipio as the discoverer's portrait, bears a certain resemblance to the Columbus of the Jovius engraving and the Yañez picture, and appears to be an original portrait of somebody. It cannot, however, be accepted as an original portrait of Columbus.

BOOK II.

ABORIGINAL AMERICA.

ARGUMENT.

Purely European causes shown to be insufficient to explain the course of American history traced from the Discovery as a starting-point, and its basis shown to lie in the social condition and history, previous to the Discovery, of the advanced tribal groups who were found by the Spaniards settled in various parts of the intertropical mountain district on the Pacific side of the Continent. Aboriginal advancement throughout this district traced to its physical basis, and shown to have resulted from the same causes, to have followed the same lines, and to have had a strictly parallel course with advancement in various parts of the Old World, although in consequence of the absence in America of the principal animal species capable of domestication it rested mainly upon agriculture, and owing to this and other causes the New World at the time of the Discovery remained several thousand years behind the Old. The social condition of the Peruvian, Muyscan, and Maya-Mexican tribal groups described, and their history traced up to and including the Spanish conquest.

Insufficiency of exclusively European causes to explain American history.

FROM the investigation of the causes and circumstances of the Spanish discovery of America we now turn to an enquiry of a different scope, having for its object to determine how far the history of the New World was affected by its physical features, and by the distribution and the social condition of its aboriginal inhabitants. The necessity for such an enquiry is not immediately obvious; but upon closer examination it becomes plain that American history cannot be treated as a simple expansion of European enterprise on the virgin soil of the transatlantic continent. Exclusively European causes, although they supplied the principal motive force to the sequence of events, do not suffice to account for the direction assumed by the general lines of American history when it is attempted to trace it from the Discovery as a starting-point. Much less do they explain the different rates and degrees of progress, and the singular contrasts of transience and permanence, of weakness and strength, which European enterprise has exhibited

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in different parts of America, and which have produced the varied aspect which the States of the New World now present. More vivid contrasts are not to be found in the Old World, with a sequence of events measured by thousands instead of hundreds of years; and they prove to be connected with causes anterior to the Discovery, and originating in the New World itself. If, for instance, we institute comparisons, on the one hand between the Spanish colonies of Cuba and Puerto Rico, and the neighbouring English colony of Jamaica, and on the other hand between the Spanish-American Republic of Peru[1], and some Anglo-American State, such as Pennsylvania; the first of these comparisons discloses differences which are comparatively slight, although the colonial capacity of the English people has far exceeded that of the Spanish, and the colonial policy of England has to a greater extent than that of Spain been favourable to the growth of the colonies which it has created. All these islands are colonies of a single type; that in which a peculiar form of agriculture, devoted to raising what are technically known as 'colonial products,' which are not necessaries but luxuries of life, and which are exclusively produced in tropical countries, is carried on under European direction, by negro labour. Their internal economy and their outward aspect are equally alike. The differences disclosed by the second comparison are so great that no inequality in the colonial capacity of the Englishman and the Spaniard, and no difference in the policy of the two nations, suffices to explain them. Pennsylvania, as its name implies, a simple section of the primitive North-American forest, cleared by the axes of European settlers, is a natural off-shoot of Europe: alike in the race to which its inhabitants belong, and in their pursuits, in its agriculture and its mineral industries, in its manufactures and its navigation,

[1] Owing partly to its isolation, partly to other physical conditions, the Peruvian sierra has preserved more of its aboriginal character than any other large district of the New World. But everywhere in Spanish America, except in the Argentine Confederation, Chile, and Costa Rica, the Indian and mixed elements greatly predominate over the European, which is understood to be diminishing, while the Indian is increasing, and the mixed element reverting to the Indian type.

it is the counterpart of its colonial parent. But Peru is a native Indian state. It is true that in its capital city of Lima, and to a less extent in its other towns of colonial origin, the features of Spanish life are approximately reproduced, and that colonial produce is cultivated in its warmer valleys; but elsewhere the aspect of the country is totally unlike that of Europe or of an European colony. Cuzco, the capital of the Incas, remains as it was laid out by them in the twelfth or thirteenth century, and is still the second city of Peru; and of its large population seven-eighths are pure Indians, speaking their aboriginal language and no other[1]. The sierra, the seat of the Inca dominion, is still the most populous and thriving part of the republic; and its population, in which there rules the same proportion of Indians to Europeans as in the ancient capital, follow the pursuits which occupied them at the conquest, separated from the rest of the world by the same natural barriers which marked out the dominion of the Incas[2]. Peru remains substantially an aboriginal state, because here European enterprise has been checked and modified by the collateral causes above-mentioned, by physical features, and by the distribution and the social condition of the aboriginal inhabitants. In the case of the West Indian islands there is little difference in physical features, and the aboriginal inhabitants do not affect the comparison, because their low degree of advancement[3] doomed

[1] Squier, 'Peru,' p. 455.

[2] Though the food-production of the sierra has been augmented by animals and food-plants introduced from Europe, the llama and paco are still its principal animals, and the potato, oca, and quinoa-bean (with maize in the valleys) its chief food-plants. The guano deposits of the headlands on the coast, and of the Chincha Islands, which, until recently, constituted the principal national wealth of Peru, were worked by the aborigines of the coast valleys, whose maize was largely dependent on these deposits (Arriaga, 'Extirpacion de la Idolatria del Piru,' p. 31), and who also had cotton plantations.

[3] In Peru, agriculture had become the employment of the male population, who had thus become inured to labour. In the West Indian islands the males were unaccustomed to labour, and the rudimentary agriculture which existed was exclusively the work of the women. The Arawaks and Caribs of the islands, however, were not lower in advancement than those of the continent (Guiana), who have survived the conquest. Their insular situation, which rendered escape from the European invaders impossible, made their extirpation inevitable when the Spanish forced them to labour in the plantations and mines.

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them to extirpation at an early period. The case of Peru and Pennsylvania presents the opposite conditions. The physical features differ as widely as those of France and of Tibet; and in the one the aborigines have passed away, whilst in the other they constitute the mass of the population. In the case of the former comparison, the social conditions which it collates, and which show but slight differences, are the results of purely European causes. In the latter case, the profound and permanent differences which are disclosed are due to those physical and ethnological causes, exclusively belonging to the New World, which it is proposed in the present Book briefly to investigate. The pursuit of this enquiry is found to lead to conclusions which verify in a remarkable manner the doctrine that the general course of history is ultimately controlled by physical causes. For it can be shown that the aboriginal occupation of the New World was determined by its geographical relation to the Old; that its physical features determined the social condition of its population, and limited the possibilities of early advancement to particular districts, bearing a small proportion to its total area; that in the communities occupying these limited districts there took place a natural process of advancement, similar to that which took place in the Old World, and a gradual consolidation of the advanced communities under the domination of the most powerful aboriginal tribes; that this process was interrupted by the Spaniards, who founded their transatlantic empire on the ruins of the dominant aboriginal powers; that the Spanish-American dominion was limited to the districts thus conquered, together with certain others intermediate and adjacent, and to such parts of the Atlantic coast as were necessary to the security of its communications with Europe[1]; and that the greater part of North America, including precisely those districts which were best adapted

[1] Florida in the north, and the Plate River (Asuncion and Buenos Ayres) in the south. The occupation of the former coast was necessary to protect the homeward route from the Havana to Europe. That of the latter was necessary to the security of the silver mines of Upper Peru, which could be directly approached by the Plate River from Europe.

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for settlement by civilised colonists, and whose shores were nearest to the shores of Europe, was consequently left open to adventurers of other nations. American history, in other words, extends in an unbroken succession of events back through the period of aboriginal occupation to the beginnings of settled life in these advanced districts.

Extent to which European causes explain American history.

For the purpose of illustrating this point it may be well to examine how far exclusively European causes actually go in explaining the beginnings of American history. It has appeared, in the course of the preceding Book, that the Discovery, and its occurrence at a particular juncture, are traceable to the physical conditions of the Atlantic Ocean, and to the gradual extension of its navigation, in accordance with certain cosmographical and commercial ideas which prevailed in Europe in the fifteenth century. A geographical discovery of such interest and magnitude, it has further appeared, communicated to maritime adventure a new impulse, which in thirty years brought within European knowledge most of the eastern coast of America, and proved that its western coast was bounded by the same ocean which bounds the eastern coast of Asia, and that this ocean was of far greater extent than that which divides America from Europe. The belief that the new discoveries formed part of the Terra Firma and islands of India was thus dispelled, and America assumed its true place in geography as an absolutely New World. The change from the erroneous conception of America as a part of the Terra Firma of India, to the true conception of it as a New World, is important because it lent countenance to the pretensions of powers other than Castile and Portugal to share in its occupation. The politicians of Spain, with good reason, resisted this innovation. They adhered to the old name, and insisted that the newly-discovered continent was as much a part of India as the islands of the eastern archipelago, and the Asiatic coast east of Malacca, which fell within the meridian of demarcation on the other side of the globe. The discontinuity of Asia and America in the extreme north was not yet demonstrated. While the entire continent of America was denominated 'the West

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Indies,' the part north of Panama was called 'the North Indies,' and South America 'the South Indies[1].' The general denomination of 'the Indies' was in practice chiefly applied to the New World, the Asiatic possessions assigned by treaty to Portugal being called for the sake of distinction 'the East Indies;' and the aborigines were universally called 'Indians.' These names were not the mere monuments of a geographical error. They were, on the contrary, full of political significance, because they asserted by implication an exclusive title, based upon rights which the peninsular sovereigns had acquired in virtue of their explorations of the Atlantic in the direction of the route to the true India round the Cape of Good Hope, rights which were shared by no other European nation, and which had been duly confirmed to them by the Holy See.

Partition between Portugal and Spain.

Next to the Discovery itself, among the causes exclusively belonging to the Old World which have affected American history, stands the celebrated partition of the globe between Spain and Portugal, made pursuant to the exclusive title just mentioned. This partition must be considered with reference to the sequence of events of which it formed part. The settlements made in the Atlantic island groups, consequent on their discovery or rediscovery during the fourteenth and fifteenth centuries, had been made by the subjects or licensees of Portugal and Castile; and Castile had thus acquired the sovereignty of the Canaries and part of the adjacent African coast, while Portugal had similarly acquired the three groups of Madeira and Porto Santo, the Azores, and the Cape Verde Islands, together with the African coast south of the Canaries, so far as that coast had been explored. The Portuguese kings had fortified their title to the African coast and the three island groups by procuring grants from Martin V. and other Popes, under which they were invested with exclusive rights in all discoveries to be made beyond Cape Bojador 'as far as

[1] 'Indias Occidentales, Indias del Norte, Indias de Mediodia.' Herrera, Descripcion de las Islas, &c., cap. 4. The Spanish possessions in the oriental archipelago were called 'Indias del Poniente,' with reference to the Pacific ocean, by crossing which they were reached.

India': and these rights the sovereigns of Castile were bound by treaty to respect [1]. As the Antilles were supposed to be part of the Indian archipelago, it was obvious that the Portuguese title might be interpreted so as to include them. On the return of Columbus, the King of Portugal made preparations for occupying them [2]; and, with the view of defeating this claim, it was resolved to obtain at once from the Pope a grant of the new discoveries, and also a declaration of the exclusive right of Castile to the comparatively remote field of maritime exploration which the westward voyage of Columbus had opened. Without giving any notice to the Portuguese crown, and on the mere application of the Spanish sovereigns, grants to this effect were obtained by two separate Bulls, dated the third and fourth of May, 1493. The first merely confirmed to the crown of Castile such lands in the Atlantic as its vassals had already discovered or might in the future discover, together with the same rights and privileges as were enjoyed by the Portuguese crown in respect of its African possessions [3]. The second purported further to vest in them the sovereignty of whatever islands and continents they might discover to the west of a meridian line to be drawn 100 leagues to the west of the Azores and the Cape Verde Islands [4]. The

[1] Muñoz, Hist. del Nuevo-Mundo, L. iv. c. 18. 'Hasta la India,' the expression of Muñoz, is apparently a translation of the words, 'usque ad Indos,' in the Bull of Nicholas V. The latter expression, however, is limited by the following words, 'qui Christi nomen colere dicuntur;' the Pope's aim, as appears from the context, being to secure a maritime connexion with the Christians of the Malabar coast (see ante, p. 58), with the object of inducing them to cooperate with those of the west in attacking the Mahomedans. This would hardly carry the Portuguese rights as far as the Archipelago.

[2] Navarrete, vol. ii. p. 28.

[3] Id., p. 31.

[4] Id., p. 38. Both Bulls, the formal parts of which are identical, are regarded by Muñoz, following previous Spanish writers, as having been duly sealed and issued as concurrent instruments. The former one, however, dated the 3rd of May, appears to exist only in ancient copies, in which the clause indicating execution is wanting: while the original of the second, in which this clause appears, has always been kept in the Spanish archives. It further appears from the Pope's letter, dated May 17th, 1493, to the Nuncio at the Spanish court, referring to three Bulls as being transmitted with it to Madrid, that only one of these related to the new discoveries, the others relating to other matters (Harrisse, Bibliotheca Americana, Additions, p. 2). Possibly the first Bull was never executed.

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grant thus obtained was at once challenged by John II. as an encroachment on his rights. Whatever lay between Cape Bojador and India was claimed as within these rights; and the nature of the claim is illustrated by a proposal for the settlement of the dispute which was now made on the part of Portugal. John II. offered to draw a line due west from the Canaries, and to surrender to Spain all that lay to the north of it, except Madeira and the Azores, on condition of being left in undisturbed possession of all that lay to the south of it[1]. Had this offer been accepted, the fortunes of the New World would have undergone a singular change; for Spain would have been limited to North America, north of the Gulf of Florida, while Mexico, the Antilles, and all South America, would have passed to Portugal. This proposal, to make the limit of Spanish sovereignty on the coast of Africa the limit of Spanish rights in the Indies, although a concession on the part of Portugal, would obviously have deprived the Spanish crown of the immediate fruits of the expedition of Columbus; and at length, after considerable negotiation, the principle of demarcation by a meridian line was agreed to, but the meridian was removed 270 leagues further to the west. In 1494 two treaties were made, by the effect of which some trifling concessions were made to Spain on the African coast, and the meridian of demarcation was fixed at a point 370 leagues west of the Cape Verde Islands[2]. We are ignorant on what principle the cosmographers of the two crowns settled the distance thus agreed on; but we know that it was apprehended by the Portuguese that to fix the meridian at 100 leagues might have the effect of giving to Spain valuable islands on the African coast, as yet undiscovered, and possibly some part of the coast itself[3]. The change was rather made with the view of safeguarding Portuguese interests on the eastern side of the Atlantic than with that of assigning to Portugal any share in the region which had been opened by the discovery of Columbus; and the latter result, which happened as soon as the coast of Brazil was

[1] Herrera, Dec. i. lib. 2, cap. 8.

[2] Navarrete, vol. ii. pp. 131, 147.

[3] Id., p. 124.

reached and its longitude was approximately ascertained, was entirely unexpected. It then appeared that the meridian of demarcation intersected the American continent in such a way as to cut off to the east a considerable part of the coast between the Amazons and the Plate rivers; and Portugal thus became entitled to the eastern angle of South America, all the rest of the continent, together with the Antilles, remaining to Spain.

Participation of France and England.—Brazil.

Having thus adjusted their conflicting pretensions, the crowns of Castile and Portugal claimed to hold the new continent, in virtue of their papal grants, against the rest of the world; and no more effectual means of stimulating competitive claims on the part of maritime nations like England and France could possibly have been devised[1]. It has already been shown that in neither country was a title to newly discovered lands founded on general grants from the Holy See, and not on actual discovery and occupation by the servants or subjects of the claimant crown, likely to meet with recognition[2]; and from the moment when the existence of hitherto unknown lands of large extent on the west of the Atlantic was demonstrated, the sovereigns of France and England aimed at sharing in the advantages derivable from their occupation, and with this view each of them authorised the exploration of the eastern coast of North America. No general claim formulating these pretensions could be put forward in either country, because the very ground of such pretensions was the necessity of actual occupation as a foundation of title. Actual occupation took place in due time; but not until the way had been prepared for it by a series of voyages in more southern latitudes, extending over many years, in the course of

[1] The Bull of May 4, 1493, printed on broadsides, was rapidly circulated in Western Europe. In answer to the ridicule with which the pretensions founded on it were received in England, Spanish writers could retort that the English dominion in Ireland was founded on a similar grant from Pope Adrian IV to Henry II. in 1159. Solorzano-Pereira, in his defence of the Spanish title (De Indiarum Jure, Lib. ii. c. 24), prints Adrian's Bull at length ('quoniam elegantissimum est, et huic Alexandri VI., de quo agimus, valdè consentaneum'), The island of Corsica had been similarly granted by the Pope to Pisa in 1092.

[2] Ante, pp. 222, 223.

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which the seamen, first of France and afterwards of England, became gradually familiar with the situation and capabilities of the coast of the New World. The fact that the French took the lead is apparently due to two causes: firstly, to the close commercial relations which existed between the ports of northern and western France and those of Portugal[1]; and, secondly, to the intermittent state of war between France and Spain during the reign of Charles V., while England was in alliance with the latter power. Owing to the former of these causes, Norman and Gascon seamen came at once to frequent the coasts of Brazil in increasing numbers. Owing to the latter cause, the same seamen appeared on the coasts of Spanish America as pirates, first plundering the Spanish homeward-bound ships, then attacking the scattered and unfortified Spanish settlements, and ultimately forming settlements of their own on the American coasts; courses of action which were afterwards imitated in the same order by the seamen and military adventurers of England. While French ships regularly traded to the Guinea coast, and from Guinea by an easy transition extended their voyages to Brazil, and while English ships everywhere followed closely in the wake of the French, for thirty years after its Discovery the coast of Brazil appears to have been almost entirely neglected by the Portuguese. This is readily understood when it is considered how vast a field was opened to them in Africa and the East Indies. It was not until 1531 that the first Portuguese settlement was made on the Brazilian coast, and when Pero Lopes de Sousa in that year took possession of the island of Itamaraca, he found it already occupied as a French trading station[2]. The hold which Brazil had acquired on the French mind is illustrated by the fact that when Coligny twenty years afterwards proposed to found a Huguenot colony in America, he selected a site to the south of the then existing Portuguese settlements in Brazil: and it was only when it became clear that the Portuguese would suffer no heretical community on the Brazilian coast that the Protestant statesman turned

[1] Jules Thieury, Le Portugal et la Normandie, pp. 29, 42–44.

[2] Magalhanes de Gandavo, Hist. of the Province of Santa Cruz, ch. 3.

his attention to that of Florida, which was within the limits assigned by treaty to Spain. About the same time another body of French settlers was expelled from Parahiba[1]. In 1594 some French Catholics established themselves on the island of Maranhão: and in 1612 an attempt was made to found a French colony on this island by a mixed body of Protestants and Catholics, who were, however, driven out three years afterwards[2].

The French in the North.

While the field already occupied by Spain and Portugal thus attracted the French in the south, they sought to create an independent one in the north. When the south-western passage to India had been discovered by Magalhaens, and the continuity of the North-American coast had been proved by Verrazzano, the attention of geographers was naturally transferred to the imperfectly explored sea of Newfoundland. From an early period the French had engaged in the Newfoundland fishery, which they shared with the English and Portuguese, though the French vessels predominated in number. Some knowledge of the configuration of Newfoundland and the neighbouring coasts already existed in France: and in 1534 a French seaman was commissioned to explore them thoroughly, with the object of discovering a westward passage from these seas to India. Cartier navigated the coasts of Labrador in vain. Failing to discover any outlet, he explored the gulf of St. Lawrence westward as far as the island of Anticosti, and in the following year he sailed up the St. Lawrence river as far as the flourishing Indian village of Hochelaga, to which he gave the name of Mont-royal. Here the French king resolved to found a colony; and in 1541 a body of immigrants landed under the direction of the Sieur de Roberval. The settlement, however, was abandoned two years afterwards, owing to the severity of the winter climate, the absence of the precious metals, and the hostility of the natives. While it was inferred, not unreasonably, from the reports of Cartier that Labrador formed the north-eastern angle of Asia, and that no north-

[1] Southey, Hist. of Brazil, vol. i. pp. 305, 351.
[2] Id., pp. 391–427.

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west passage to India could exist, the failure of Roberval's expedition discredited northern enterprise: and although the plans of the French were not altogether abandoned, and the valley of the St. Lawrence was still claimed as the northernmost district of New France, no attempt was made to colonise it until a similar project had been taken up in earnest by English adventurers, who regarded the French as intruders in a district to which the voyage of Cabot gave England a prior claim [1].

Protestant reaction against Spain.

The participation of England in American enterprise followed naturally upon that of France, and proceeded upon precisely the same external lines. Commencing with a breach with Spain, consequent upon the decease of Queen Mary in 1558, which culminated twenty years afterwards in a naval war waged on both sides with extraordinary bitterness, of which the real object on the part of Spain was the forcible suppression of Protestantism throughout Europe, it ended in strenuous efforts by English military and naval adventurers to enter to the fullest possible extent on the transatlantic inheritance of Spain [2]. The details, however, of this movement are obviously beyond the scope of an enquiry into the extent to which purely European causes influenced the beginnings of American history. When it commenced, the results of the first century of American history were already developed. The Spanish-American empire, though not yet perfectly organised, by this time contributed so materially to the effective strength of Spain that to assail her in America was the most effectual method of attack that could be adopted by an European enemy. For the purpose of the enquiry immediately before us the intervention of England in American enterprise may therefore be regarded as an event certain to happen, but the occurrence of which would be controlled by results not as yet produced. All that needs to be borne in mind, in connexion with France and England, in

[1] See Hayes' Report of Gilbert's Voyage in 1583, Hakluyt, vol. iii. p. 143.

[2] Raleigh's projects are the embodiment of these ideas, which were not wholly extinguished by his death. See Fenning's plan for the general conquest of the West Indies by England, 1623, Clarendon Papers, vol. i. pp. 14–21.

surveying the commencement of American history, is that some share in American adventure would naturally fall to each of two maritime powers which commanded the Northern Atlantic, but which were excluded from the New World by the papal grant, in case either of these powers were brought by circumstances into collision with Spain or Portugal. It has appeared that each of these powers, like Spain and Portugal themselves, was in a state of gradual advancement, and bent on commercial and territorial extension; and in each there existed social elements on which transatlantic enterprise was capable of exercising a powerful attraction. Such a state of things in the four maritime countries of Western Europe obviously constitutes a group of causes, all deriving their motive power from Europe, which would have sufficed to give a determinate form to American history if the New World had been uninhabited, or if it had been universally inhabited by a population too low in grade for absorption into a civilised community.

European causes affect chiefly the history of the Eastern Coast.

But when we attempt to apply these purely European causes to explain the sequence of events which took place in America, their insufficiency becomes manifest. There are, indeed, limited districts, such as Brazil, the Southern coast of the Caribbean sea, and the Antilles, within which such causes were from first to last of exclusive application; and the same causes, applied in the circumstances of a century later, suffice to explain the early development of Guiana and the Atlantic coast of North America. From these instances we are enabled to calculate what would have been their general effect if they had operated exclusively throughout the New World. We may infer, in the first place, that American adventure would long have been confined to the West Indian islands and the Atlantic coast; that it would have been, in the first place, limited to tropical latitudes; and that its extension to temperate climes would have been deferred until the tropical latitudes had been fully explored. From the first, the transatlantic enterprise of Europe took a definite direction southward; and although the advantages of the North American coast

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did not escape observation, general opinion prescribed that enterprise should not be diverted from the more profitable fields which existed in the opposite direction, to latitudes where little could be obtained which could not be obtained with less trouble in Europe itself[1]. Natural products, chiefly the valuable timbers of the tropical forest, would have served as a first basis of commerce, and in some places gold would have been procured in small quantities from the natives. The sources of its supply would be eagerly sought, and gold-mining would be pursued with energy. Agriculture, based on the native food-staple, maize, would be begun, and European grains and domesticated animals would be introduced. The culture of tobacco, cacao, sugar, and cotton, and ultimately of other tropical produce, would follow; but from the beginning both agricultural and mining enterprise would be hampered by the difficulty of procuring a sufficient supply of labour. After unsuccessful attempts to utilise the aborigines as labourers, the adventurers would have recourse for this purpose to the Old World. Negroes would be imported from the Portuguese settlements in Africa, and criminals, paupers, and indentured labourers from Europe. Settlements formed on such a basis would be limited in extent, and slow and precarious in their formation and growth. But in the course of time they would represent considerable investments of European capital, would become valuable possessions of the European powers, and would pass from one to the other by the course of war and diplomacy. The advance of the colonists into the interior would be impeded by the forests which everywhere covered the Atlantic shore, and by the hostility of the aborigines, and the colonial capitals would invariably be seaports. The exploration of the interior would be occasionally pursued by means of the great navigable rivers, but its occupation would not be effected; and there would consequently be no division of the continent into territorial districts

[1] 'At quid opus est his nobis quae vulgaria sunt apud Europaeos omnes? Ad Austrum, ad Austrum, ob aequinoctii latas opes, quaerentibus opes tendendum est, non ad rigentem Boream.' Peter Martyr, 'De Orbe Novo,' Dec. viii.

extending considerably towards the interior. The European settlements would fringe the coast, which would be irregularly distributed among the several powers, as the Antilles and Guiana are to this day, and as Brazil and the United States would still have been had the original settlements made from time to time been allowed to remain undisturbed.

Aspect of Spanish America after twenty-five years.

The course of American history during its first century, in which the progress of Spanish enterprise has a prominence corresponding to the predominance of Spain in the original partition of the continent, presents a picture strikingly different from that which has just been sketched out. During the first quarter of a century, indeed, the main features of this sketch may be said to hold good. But in 1517, Cordova's discovery of Yucatan, the most advanced district of the New World, revealed the previously unsuspected fact that there existed in America aboriginal communities in which the hunter-life had been abandoned, and which so far resembled those of the Old World as to depend for existence upon agriculture, to be settled in stone-built villages or pueblos of considerable size, to have definite systems of government and religion, to hold large tracts of country in some kind of subjection, and to possess stores of gold and silver. From the date of this discovery a change takes place, the nature of which will be best indicated by comparing the results of Spanish enterprise in the New World at the end of these first twenty-five years (1492–1517), during which it was limited to districts sparsely occupied by the less advanced tribes, with the results of the next twenty-five years, in the course of which it was extended to those occupied by these more advanced peoples. In 1517, a quarter of a century had elapsed since the Discovery, and many thousands of adventurers had settled in the New World. There were 18,000 in Española alone. But Spanish enterprise was still practically confined to the quest of gold in this island, though some beginnings of the same nature had been made in Cuba and Puerto Rico; and every attempt at establishing colonial settlements on the mainland had resulted in failure. Settlements such as those

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of Columbus on the river Belen in Veragua, in 1503, and that of Hojeda, at San Sebastian, on the east side of the gulf of Darien, had been equally unsuccessful; and Santa Maria del Antigua, founded by Enciso on the west side of the same gulf, in 1509, rapidly dwindled after the discovery of the Pacific, of which it was the starting-point, and became a mere hamlet. The new settlement of Panama, on the Pacific, attracted most of its former inhabitants; and Nombre de Dios, founded by Nicuesa in 1510, derived its importance solely from the circumstance that it was the port of landing for Panama and the Pacific. While the ill success of the Spaniards on the mainland gave small promise for the future, the islands, particularly Española, were regarded as the certain seat, at no remote date, of thriving nations of Spanish descent; and in the opinion of the time the advantages which they offered exhibited a strong contrast to the unhealthy and unproductive shores of the continent, inhabited by savage and warlike tribes[1].

Aspect of Spanish America after fifty years.

In striking contrast with this meagre result, we find that in 1542 Spanish authority had been established over a vast district, lying chiefly on the Pacific side of the continent, and extending from the Western Sierra Madre of Mexico in the north to the Alta-planicie of Bolivia in the south. Inter-tropical America, exclusive of the forest-covered region in South America between the Andes and the Brazilian coast, had in effect been permanently added to the dominions of Castile. This extraordinary change indicates that after 1517 Spanish adventure had entered upon a new path. Conquest had in fact been substituted for colonization. The anticipations suggested by the sight of Yucatan, with its stone-built pueblos and advanced native population, had been abundantly realised. Two years afterwards, an experienced colonist of Cuba, at the head of five hundred Spanish soldiers, had penetrated to the valley of Mexico, made himself master of the aboriginal pueblos which dominated it, and in virtue of this conquest had been enabled to establish Spanish authority over most of the mountainous southern extremity of North America.

[1] See especially the third Decade of Peter Martyr, written about this time.

Eight years after this (1527), some colonists of Panama, who had united to defray the expenses of an expedition to the southward, reached a valley on the Pacific coast which afforded equally clear evidence of advanced aboriginal life. It was found to be the first of a long series of such valleys, breaking the desert-coast between the ocean and the Andes, all teeming with an advanced agricultural population subject to local tribal government, but all owning obedience to a powerful tribe which had its seat in the distant recesses of the mountains. From the valley of Cuzco, in the midst of a comparatively small district hemmed in between deep gorges, the Inca tribe had succeeded in reducing the tribes of the neighbouring mountain valleys and plateaux, and had ultimately formed an aboriginal state, including all the district between the Pacific and the tropical forests east of the Andes, for a distance of 1500 miles from the equator southwards. The northernmost tribe included in their dominions were the Caras of Quito. A physical obstacle had here interrupted the Inca conquests; but Spanish exploration yet further to the north revealed a smaller group of advanced tribes who occupied adjoining districts on the lofty plateau of Cundinamarca or Bogota, to the eastward of the great river Magdalena, the outlet of which into the Caribbean sea was well known to Spanish seamen. Each of the three districts thus successively discovered was at once incorporated into the Spanish dominions with the title of kingdom. The northernmost received the name of New Spain, but became better known under the name of Mexico. The great district of aboriginal dominion in the south received from its first explorers the name of Peru, a term of uncertain origin unknown in the country itself. The third was denominated the New Kingdom of Granada. All three were mountain districts, occupied by agricultural tribes under settled government, and in all there were found large accumulations of the precious metals.

Basis of Spanish enterprise shifted to

This series of events indicates a complete change in the course of Spanish enterprise. The discovery of Yucatan, in 1517, was in fact the commencement of a new movement,

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of which the object was the internal exploration of the continent in search of advanced aboriginal communities, on whose conquest territorial dominion, more congenial to Spanish ambition than the slow process of colonization, could be at once established, and whose plunder would yield accumulations of the precious metals. The conquest of New Granada, which was reached almost simultaneously by three different adventurers[1], proved to be the end of the movement. The thinly peopled districts north of Mexico, the forests of Florida, bounding the gulf of Mexico on the north, the basin of the Amazons, and the vast plains of the Plate river, to the east and south of Peru, were traversed in vain by successive parties of eager adventurers. Although in all these districts there were found settled populations in whose life agriculture had a more or less prominent place, the essential conditions which prevailed in the intertropical mountain districts, the reduction of tribes over a considerable area under military government, and the possession of accumulated stores of gold, were absent. The field within which the conquest of conquering aboriginal tribes could be advantageously pursued was thus found to be exhausted; but the effect of the pursuit of this object during twenty years had been to shift the geographical base of Spanish enterprise. It removed this base from the islands of the Caribbean sea, and fixed it in the great mountain range which forms the wall of the continent on the Pacific side; and the position of Mexico, New Granada, and Peru suggested certain other portions of the great mountain range as districts either necessary or desirable for the security or the completeness of the new transatlantic dominion which they composed. These districts were of two different classes. The first consisted of the comparatively small districts which were necessary to extend the areas of aboriginal conquest to their natural boundaries, and which may be described as their geographical complements. The second consisted of larger

[1] Quesada, marching from the Magdalena, Belalcazar, from Quito, and Federmann, from Venezuela, reached the plateau of Bogota within a few months of each other.

districts, outside these natural boundaries; districts where similar physical conditions prevailed, and in some of which a state of advancement had been reached nearly corresponding to that of the tribes within the areas of conquest. Such were the districts now included in the States of Central America, Chile, and Bolivia, or Upper Peru.

Spaniards extend areas of aboriginal conquest.

In adding districts of the former class to their dominions, it is obvious that the Spaniards were taking up the task which had been begun by their aboriginal predecessors. The foundations of the Spanish dominion in America were laid by the Incas and the Mexicans of the lake: for in each case the Spanish conquest supervened upon and completed the work of conquest which aboriginal tribes had begun. Long before the arrival of the Spaniards, in both of the two divisions of America, a similar process was taking place. Warlike tribes, in the agricultural stage, quitting their previous seats, and advancing from the north and south respectively, in the direction of the equator, had forced their way into districts already partially settled by other tribes, and had effected settlements in their midst, choosing for this purpose in each case an advantageous military position. Each in the course of time acquired a local ascendancy through success in intertribal warfare, and by ultimately allying itself for military purposes with its immediate neighbours, extended their joint authority over the larger district which constituted the area of aboriginal conquest. Such, according to local traditions, had been the sequence of events in Mexico and Cuzco. The advanced tribes of New Granada had no legends connecting them with any former seat, and though certainly immigrants from the neighbouring lowlands, had been so long settled on the plateau that they regarded themselves as autochthonic. At the time of the conquest, they constituted three groups, in each of which a powerful pueblo dominated over its neighbours; and that of Muequeta was steadily encroaching on the areas dominated by those of Tunja and Iraca. Tradition indicated the tribe of Tunja as having originally been the most powerful on the plateau, and the supremacy of Muequeta as only dating from about sixty years before

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the conquest: a condition of things which recalls the relations of Tezcuco and Mexico before the formation of the lake confederacy, and suggests that, like the Mexicans, the tribe of Muequeta may have arrived last within the area in which their domination was in course of extension. It thus appears that in all three areas aboriginal conquest had prepared the way for the conquests of the Spaniards; but it had been pursued to the greatest extent in the southernmost of the three.

Areas of aboriginal conquest and the Spanish dominion.

In the cases of Mexico and New Granada, this process, begun by aboriginal conquering tribes, was carried to natural limits by the Spaniards. In Peru physical boundaries had been already reached by the aboriginal conquerors, and no expansion of territory was possible. The ocean on the west, the desert on the south, the steep declivities of the Andes, overlooking the hot and heavily-forested montaña on the east, the desolate mountain region north of Los Pastos, together with the dense forests on the corresponding Pacific coast, on the north, were physical limits circumscribing alike the dominion of the Incas, and Spanish Peru. New Granada, on the other hand, was an isolated plateau in the midst of a large district, to which its boundary had to be extended. It was approached from the Caribbean sea by the great navigable river Magdalena, parallel with which, for a great part of its course, runs its tributary, the Cauca. The region traversed by these rivers, together with the adjacent forest region bordering on the Pacific on the west, and the slopes of the Andes on the east, represent the natural extension of the aboriginal area of conquest on the plateau of Bogota. The expansion of the northernmost area of aboriginal conquest into the Spanish kingdom of New Spain took place under similar conditions. The process of aboriginal conquest was here far less advanced than in Peru. The confederacy of the lake pueblos of Mexico, Tezcuco, and Tlacopa, on the overthrow of which the Spaniards based their dominion, was but one of several rival aboriginal powers, of approximately equal degree of advancement, which dominated various parts of the large district limited on the west by the Pacific, on the east by

the Mexican Gulf, on the south by the isthmus of Tehuantepec, and on the north by a mountainous district sparsely occupied by independent hunter tribes, known to the Mexicans as Chichimecs. On the south-east the lake confederacy had the rival confederacy of Tlaxcallan and Huexotzinco. On the west they had the independent Tarascan tribes in the district of Mechoacan. Beyond the mountains which bounded Mechoacan on the south-west, the whole coast as far as Culiacan to the northward, and the district occupied by the settlements of the Miztecs and the Zapotecs of Oaxaca to the southward, was inhabited by independent tribes of Mexican race. On the north, the confederacy had the hostile tribes of Mextitlan, and beyond them, in the district watered by the Tampico, the Huastecs. North and east of Tlaxcallan, on the shores of the gulf, were tribes tributary to Mexico, who had submitted to the Spanish invaders on their first landing. The tribes of Tlaxcallan were the next to submit; and by their active assistance the conquest of Tezcuco and Mexico was effected. The fall of the lake confederacy was the signal for the voluntary submission of most of the other advanced tribes, among whom it had long been the dominant power. The rest were subdued without difficulty, and the Spaniards then became masters of the whole district between the mountains of the Chichimecs on the north, and Tehuantepec on the south.

Adjacent districts incorporated with Mexico and Peru.

If to the three areas of aboriginal conquest we add the original area of Spanish adventure, the Antilles, with the continental coasts which they commanded, and Brazil, the share of Portugal in the New World, we have defined before us five separate districts, which represent the five original units in the territorial distribution of America. The conquest of the district of Mexico at once indicated for occupation two others: (1) to the southward, the mountainous district of Central America, consisting of the rapidly-narrowing extremity of the northern continent, between the isthmus of Tehuantepec and that of Panama, and including Yucatan, Chiapas, Tabasco, the mountain-range of Guatimala, Honduras, and Costa Rica, and (2) the northern

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part of the Mexican plateau, beyond the limits of its occupation by the confederated tribes of the valley and the other advanced tribes in contact with them. The populous district first mentioned, inhabited chiefly by tribes speaking languages of the Maya group, but including within its boundaries some of Mexican origin, all of which had a social organisation so nearly approximating to that of Mexico that they may be considered for historical purposes as a single group, was reduced by the lieutenants of Cortes immediately after the conquest of Mexico. The Western Sierra Madre, north of Mexico, was next explored, and added to the Castilian dominion by the title of New Galicia. Two other districts were indicated for occupation by the conquest of Peru: (1) that of Chile, on the Pacific, consisting of the valleys and uplands of the Andes to the south of the Tarapaca desert, a district into which the Incas had penetrated, but in which they had gained no permanent footing; and (2) the great plateau, now known as the Bolivian Alta-planicie, lying to the south-east of the dominions of the Inca tribe, and intervening between them and the great southern river-basin of South America. The Bolivian plateau not only resembled Peru in its physical features, but it was inhabited by tribes of the same linguistic group to which the Incas belonged, and it was found to contain the richest silver mines ever discovered by the Spaniards. For these reasons, it received the name of Upper Peru. Its connexion, through the Pilcomayo and other rivers, with the basin of the Plate river, furnished an additional reason for its occupation: for the Plate river, flowing into the Atlantic, afforded a second access to the Andes from Europe. For the purpose of guarding this important outlet the passage of the Plate river was fortified by the settlements of Asuncion and Buenos Ayres.

Additional districts of similar character to areas of aboriginal conquest.

A glance at the large additional districts thus selected by the Spaniards for occupation shows that in the selection they were actuated by ideas derived from their occupation of the three limited areas of aboriginal conquest. These additional districts were either districts over which the

aboriginal conquests, in the midst of which the Spanish adventurers intervened, were in process of extension, or which were necessary or desirable for the further security of the original areas of conquest. Their physical character was similar; and they all formed part of the great mountain district which bounds the New World on the Pacific side. Most important of all, they were all known to abound more or less in the precious metals. Their geographical position rendered them for the most part difficult of access from the Old World. This could not be reckoned to their disadvantage, for it contributed to their capacity for defence against European invaders. Compared with the eastern forest regions, and with the valleys of the great rivers, their general aspect was barren and inhospitable. Spanish politicians noted this without regretting the choice; and divines quoted Philo and Eusebius to show that the gifts of nature were generally divided, and that the metalliferous districts of the earth were usually barren and unfruitful, and the fertile ones poor in metals[1].

Advanced districts which were neglected by the Spaniards.

Attention has been already drawn to the fact that in Northern Mexico, in Florida, and in parts of the basin of the Plate river, the Spanish explorers found settled populations largely dependent on agriculture, but neither in a state of reduction under military government, nor possessing accumulated stores of the precious metals, and consequently unfit for incorporation into the transatlantic empire which Spanish enterprise thus rapidly built up. In addition to the districts above-mentioned, a large district formed by the basins of the Colorado and Gila rivers, with their tributaries, a district but imperfectly known to the Spaniards, is now proved to have been inhabited by a population of similar status. In all these districts the process of advancement based on agriculture had made considerable progress, but never reached what may be termed the stage of consolidation. One reason for this arrest of advancement, as will shortly appear, was the circumstance that in these districts the settled population had been to a greater extent exposed to the attacks of absolutely savage

[1] Acosta, Natural and Moral History, Book iv. ch. 3.

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and therefore more warlike tribes, and that their geographical conditions had been unfavourable to the formation of permanent areas of conquest, or of tribal federation. This fact, however, would not have deterred the Spaniards from adding them to their acquisitions, but for the fact that, so far as the invaders were aware, they were devoid of the precious metals. In estimating the extent of advanced life in the New World at the time of the conquest these districts must be taken into account; and to Peru, Bogota, Central America, and Mexico, must be added in the north the arid plateau, known as the Meseta del Colorado, having the district of New Mexico on the east, and the lower basin of the Mississippi and some of its tributaries, the seat of the so-called 'Moundbuilders.'

Forest region generally neglected by the Spaniards.

It thus appears that the Spanish empire in America was not only moulded in its inception upon the results of aboriginal conquest, but that in its extension the precedent set by the aboriginal conquering tribes was closely followed. With the exception of the coasts of the Caribbean Sea and the Mexican Gulf, the vast forest region which comprises the whole of the continent east of the great mountain range, was left untouched by the Spaniards of the period of the conquest, as it had been left untouched by the advanced aboriginal tribes who preceded them. The reason was the same in each case. The process of conquest requires a material of a certain kind. It can only be based on the subjection of settled tribes who are unable to escape it in consequence of their geographical position; and outside the mountain districts this condition could not apply. An instance of the limitation of both aboriginal and Spanish conquest by the physical conditions of the forest is afforded by the case of Popayan, between Peru and New Granada. The people of this district had never been subdued by the Incas, and were with difficulty reduced by the Spaniards. Though a mountainous district, its exceptional situation exposes it to a considerable rainfall, and its mountains are consequently covered with forests. When the settlements of the aborigines were attacked by a superior force, they had only to abandon them, retreat a few leagues into the forest,

and make fresh clearings[1]. On unforested plateaux, on the contrary, such as those of Peru, and on those which, like the southern part of Mexico, were in continuous occupation by adjacent tribes, the parts available for agriculture were either few and far between, or were generally already in occupation within a considerable area; escape was therefore only possible by undertaking a long and hazardous migration, and subjection to superior force was less avoidable[2].

Outline of first European occupation of America.

We have now before us the outlines of the general system on which America was occupied by Europeans. During the first century, although the participation of France and England was foreshadowed, no effectual attempt was made to interfere with its conquest and occupation by Spain and Portugal. Portugal was confined by treaty to a limited portion of the Atlantic coast, and the limit assigned to it was never exceeded. The rest of America was at the disposal of Spain. As it was impossible to occupy it in its entirety, a selection had to be made. In the Antilles settlements were made only on the four largest, Española, Cuba, Jamaica, and Puerto Rico: the rest remained for more than

[1] 'Y como los españoles los aprieten, queman las casas en que moran, que son de madera y paja, y vanse una legua de allí ó dos, ó lo que quieren; y en tres ó cuatro dias haoen una casa, y en otros tantos siembran la cantitad de maíz que quieren, y lo cogen dentro de cuatro meses. Y si allí tambien los van á buscar, dejado aquel sitio, van adelante ó vuelven atrás, y adonde quiera que van ó están hallan qué comer y tierra fertil y aparejada y dispuesta para darles fruto; y por esto sirven cuando quieren y es en su mano la guerra ó la paz, y nunca les falta de comer. Los del Perú sirven bien y son domables; porque tienen mas razon que estos, y porque todos fueron subjetados por los reyes Ingas, á los cuales dieron tributo, sirviéndolos siempre, y con aquella condicion nascian; y si no lo querian hacer, la necesitad les constreñia á ello; porque la tierra del Perú es despoblado, llena de montañas, y sierras y campos nevados. Y si se salian de sus pueblos y valles á estos desiertos no podian vivir, ni la tierra da fructo ni hay otro lugar que lo dé que los mismos valles y provincias suyas; de manera que por no morir, sin ninguno poder vivir, han de servir y no desamparar sus tierras; que es bastante causa y buena razon para declarar la duda susodicha.'

This explanation of the difficulty of conquering the forest districts, one of the earliest rational explanations of American history, is given by Cieza de Leon, 'Cronica del Peru,' ch. 13. (Add that the sling, the principal weapon of the Peruvian warriors, was useless in the forest.)

[2] See the account of the migration of the Chanca tribes, under Hanco-huallu, after their conquest by the Incas. Garcilasso de la Vega, B. v. ch. 26.

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a century in the possession of the aborigines, and were ultimately occupied by the rival European powers. On the continent, the first settlements were naturally made on the coast first reached, that of the Caribbean sea; but from the moment when the existence of advanced aboriginal communities was demonstrated, the Spanish adventurers engaged in the task of discovering and conquering them; and this process at the end of half a century from the Discovery resulted in the formation of the Spanish-American empire. In three different localities, an area of aboriginal conquest served as a nucleus for the Spanish occupation; and by a process of natural expansion, pursued partly with regard to the means of communication with the Old World, partly by following out the lines of the antecedent aboriginal conquests, these areas were developed into the monarchy of the Indies.

Radical cause of weakness in the Spanish Empire.

From what has been advanced, it is plain, that there existed from the beginning a radical cause of weakness in the Spanish-American empire. By the preference of conquest to colonization, Spanish enterprise was permanently concentrated in districts which, though well adapted for, and perhaps indispensable to the development of primitive agriculture by slightly advanced peoples, were less suitable for occupation by those in the higher stages of progress, and difficult of access from Europe; while other districts, suitable in the highest degree for the foundation of new colonial communities, and easy of access from Europe, remained neglected. The aggregation of districts occupied by aboriginal tribes settled in the great mountain range of America, and of those other territorial units which have been described as the geographical complements of the aboriginal districts of conquest, had the effect of giving to Spain a vast transatlantic empire on paper. Its substantial value to Spain lay principally in the fact that it secured to that country a continuous and ample supply of the precious metals. It was a scattered dominion, productive of little further commercial advantage, and deficient in internal means of communication. The bulk of its inhabitants belonged to an alien race, spoke their aboriginal languages,

and were never entirely reconciled to their conquerors. The disaffection which existed in Mexico, where society had reached a more advanced form, and where the aboriginal tribes were far from being completely unified, was the result of a sense of social and economical oppression; but in Peru, where substantial unity had been obtained, there mingled with the same feeling something approaching to a sentiment of crushed nationality, and of regret for the time when the structure of society was simple, because the needs which it was designed to meet were few, when the country was ruled by its native line of chiefs, and worshipped its native gods[1].

Physical conditions of the New World. South America.

When the New World is investigated with reference to its adaptability to human occupation, it is found that the inter-tropical mountain district, which includes the areas of aboriginal conquest, is by certain physical features and capabilities so strongly distinguished from the rest of America, that we cannot avoid inferring a connection between these physical features and the advancement of its aboriginal population. Considered with regard to its vertical configuration, the New World is broadly divisible into two principal districts, of unequal extent. The first is the great mountain-range, known in North America as the Rocky Mountains, in Mexico as the Sierra Madre, and in South America as the Andes, having a general direction

[1] Poor as were both Peru and Mexico, measured by the standard of the Old World, in historical interest, the contrast between them in this respect is remarkable, and contrary to what might be expected, it is to the advantage of the less advanced of the two. The Maya-Mexican tribes, confined to comparatively small areas, had little history except that of petty wars between neighbouring pueblos. Government, which in Mexico had become a system of severe exaction from the peasantry by a warrior class under no effectual control, and religion, which had degenerated into a rigid and ferocious sacerdotalism, were alike hateful to the mass of the people, who welcomed the Spaniards as deliverers. In Peru the story of the past was more varied, touched a larger area, and was intimately connected with a popular religion and with a succession of popular chiefs; and it was thrown into a charming narrative by a writer of half-Indian descent. The natives often regretted to their conquerors the happy days of the Ccapac-Incas Pachacutec and Tupac. Their descendants may be found to this day studying in their huts the pages of Garcilasso de la Vega (Markham, 'Cuzco,' p. 23); and in spite of the Catholic clergy they still pour libations of chicha to Pachamama, the Mother Earth, pray to Pachacamac, the Peruvian creator, and worship their dead ancestors.

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north and south, crossing all the zones in succession, and forming a vast wall, having a maximum height of 12,000 feet, but rising in its highest peaks to a height of 10,000 feet more, along the western or Pacific side of the continent. The second is the much larger and comparatively low-lying region, occasionally intersected by mountain-ranges of less elevation, and extending from the foot of the great mountain-range on the west to the Atlantic on the east, except where it is interrupted, in the Northern tropical Zone, by the Caribbean sea and the gulf of Mexico. This latter district is watered by numerous large rivers, having their sources in the mountain-range, and is in its natural condition clothed with forests, alternating occasionally with savannahs or grassy plains. The great mural mass which bounds it on the west, unlike the principal mountain-range of the Old World, has a direction north and south, and therefore at right angles to the direction of the great atmospheric currents, which within the equatorial zone have a general direction from east to west, and correspond to the oceanic trade-winds, while outside it their general direction is reversed. These winds are arrested in their course by the great mountain-range; and effects are thus produced on the climate of the two great physical divisions above indicated which, taken together with their different altitudes above the sea, appear to afford the clue to their history as fields for population. The inter-tropical or trade winds, blowing from the east throughout the equatorial zone, and extending about thirty degrees on each side of the equator, are heavily laden with vapour derived from the Atlantic, the proportion of moisture which they carry being at its maximum near the equator, and diminishing progressively to the northward and southward. In South America this moisture is precipitated by a corresponding distribution over the interior mountains and lowlands, and its last remnants having been arrested by the low temperature of the Andes, the wind reaches the Pacific slope of the mountains deprived of moisture. Hence, while Brazil and the interior parts of South America, as far as the pampas of the Plate

River, are covered with dense tropical forest, the plateaux of the Andes, from their elevation, are cold and comparatively bare; while the uppermost valleys of the great South American rivers and their tributaries have intermediate climates, rapidly graduated from heat to cold, and producing a corresponding graduation in the forms of vegetation. Hence also, the western coast of South America, from the equator to the southern tropic, has the general character of an arid desert, which is broken at intervals by fertile valleys, formed by the mountain streams which descend from the Cordillera to the Pacific.

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At the junction of North and South America the climatic effect of the trade wind is less simple. Owing to the comparatively low elevation of the mountains at the isthmus of Panama, it crosses them in a southward direction to the Pacific coasts, which, aided by a local N. W. wind, it clothes with forests. It pours moisture abundantly on the eastern coasts of Central America and Mexico, and the plateaux which surmount them, of less elevation than those of Peru, are well watered and partially forested; but in the Mexican gulf it is deflected northwards, partly, it may be, owing to the north-westerly trend of the table-land of Mexico, but chiefly, it is believed, owing to the 'Texas wind,' an atmospheric current blowing from south to north, and produced by the extreme heat of the great arid areas which here begin to occupy the central region of North America[1]. Thus deflected in its course, its general direction is northwards, depositing its moisture on the broad valley of the Mississippi, and conferring fertility on the southern shores of North America. But to the north-west of the Mexican plateau, the conditions of the Peruvian coast are approximately reproduced; and the arid and elevated regions of Arizona, Sonora, and Old California, deprived of moisture, have no forests, and the water-courses which intersect their parched plains are dry during most of the year. Exclusive of the dense tropical forest, which clothes its lower slopes on the east, it thus appears that the inter-tropical district bordering on the Pacific includes regions having

Central America and Mexico.

[1] Blodget, Climatology of the United States, ch. 11.

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very varied characters. It contains lofty and bleak plateaux, like those of Peru, intersected by valleys of great depth, having a warmer temperature, communicating with the forested plains to the eastward; less elevated table-lands, of moderate temperature, like those of Central America and Mexico, which receive a large share of the moisture-bringing winds, and arid districts, such as the low-lying, rainless ocean coast of Peru.

Conditions outside the tropics.

Outside the parallels of thirty degrees north and south, the direction of the prevalent winds is reversed. Though properly described as variable, their general direction, where no casual cause deflects them, is from west to east. These extra-tropical or anti-trade winds, therefore, reach the western slopes of America laden with vapour. Hence, in the northern hemisphere, the coast north of and including California, in the southern, the coast of Chile, are fertilised by an abundant rainfall, and forest conditions are produced until the growth of the forest is checked by the increasing rigour of the climate in the direction of the poles. In the latitude of California, the vapour borne from the Pacific by the westerly winds having been wholly precipitated on its lofty mountain ranges, the great plains of the interior are arid and sterile [1]. Similar conditions in South America produce the bare pampas of the Plate River basin and Patagonia. In the last-named district the continent narrows to the southward, and the arid districts extend as far as the Atlantic. But in the northern continent, which, on the contrary, broadens out in the direction of the pole, as the height of the mountain chain diminishes, the forest extends from the Pacific to the Atlantic, and joins the forest of the Mississippi basin and the adjacent district to the eastward, constituting a single vast forest district in the

[1] The climatic conditions which affect the latitudes intermediate between the tropics and the parallel of 30°, including the Californian peninsula and Northern Mexico, are exceptional: the winds being local and variable, the rainfall is much less. The isothermal lines approximate much more nearly than in the corresponding latitudes elsewhere: while Santa Fe (New Mexico) has the mean temperature of London, the head of the Californian Gulf has that of the Red Sea and Persian Gulf. The barren and treeless peninsula of Old California, and much of the interior of Northern Mexico, are arid districts.

temperate zone, which covers the continent in its broadest part.

The general result of the preceding observations may be thus stated: bounded on the west by the Pacific Ocean, on the north by an arid zone separating it from the temperate forests of California, on the east by the Mississippi basin, the gulf of Mexico, and the Caribbean Sea, and by the tropical forests of South America, and on the south by an arid zone separating it from the temperate forests of Chile, an elevated mountain district stands forth marked off from the rest of the continent by a climate comparatively temperate, notwithstanding its tropical situation, and far less densely forested than the districts above mentioned on the north, east, and south. This elevated district is precisely that within which the most advanced aboriginal communities were found. The enumeration of its boundaries leads to a noticeable distinction between the forest districts of North and of South America. If we glance at the section of America which lies between the tropics, we find that, while it includes the greater part of South America, it includes but little of North America north of Mexico. The great forest region of North America lies mainly within the temperate zone, that of South America lies mainly within the torrid zone. No part of the earth's surface is less favourable to the advancement of man, in any stage in which he has been hitherto seen, than the tropical forest. But the forest of the temperate zone affords, even under primitive conditions of life, some direct inducements to progress [1]; and none is more favourable to advancement, when

[1] The farinaceous nuts of some forest trees of temperate climes, as the araucaria, stone-pine, beech, oak, chestnut, &c. and the inner bark of some others, have sufficed to furnish a fixed basis of subsistence, and their preparation for consumption has led to the discovery of methods afterwards applied to the grains of the cereal grasses. The poorer and drier subtropical soils, as in Colorado and on the Peruvian coast, supply an analogous food in the shape of the seeds of the algarroba or mezquite-tree. The timber of the temperate forests is suitable for fuel, implements, and constructing huts and boats, and is easy of access owing to the comparative absence of undergrowth. Owing to the same cause the temperate forests, with the grassy plains which diversify them, are alike accessible to the game and the hunter, and form the best hunting grounds. Hence the aborigines of Chile, California and eastern North America reached a degree of advancement superior to that found in the tropical forest.

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man has attained to the full use of iron implements. If, therefore, it is found that the forest regions generally are less favourable to his early advancement than those which are unforested, this condition will apply with the greatest force to the tropical forest.

Artificial production of food—Savagery, Barbarism, and Civilisation.

In order to apply these physical conditions to explain the appearance in the intertropical mountain districts adjoining the Pacific coast of a degree of advancement higher than was met with elsewhere in the New World, it is necessary to trace civilisation to its beginnings. For this purpose it will be proper in the first place to consider briefly the nature and effect of a change which, wherever it has occurred, has completely transformed human society, and to which the principal features which distinguish civilisation from savagery are traceable; namely, THE SUBSTITUTION OF AN ARTIFICIAL FOR A NATURAL BASIS OF SUBSISTENCE. Of this immense change, which over most of the world, in times more or less remote, silently shifted the foundations of human society, the written chronicle of the race has little account to give. History can only seize such revolutions long after they have taken place, when upon a comparison of two stages in the life of the species it appears that a profound change has been accomplished. Upon the accomplishment of this change, it would appear, the artificial structure called civilised life depends for its origin and maintenance: while the employment of the various methods by which it may be accomplished is the efficient cause, and the extent in which they are pursued, whether separately or in combination, is the measure of all early advancement. Where such a change has not only been accomplished, but owing to favourable circumstances has completely wrought out the ultimate effects which it is capable of producing, the condition which results is called Civilisation. Where an artificial basis of subsistence has been established, but the production of these ultimate effects is checked by unfavourable circumstances, the resulting condition, in default of a better name, is called Barbarism. Where society still rests on a natural

basis of subsistence, the social state is called Savagery[1]. It must, however, be observed that the classification of societies here indicated depends not on the mere observation of the external features of life, but on the correct ascertainment of its substantial basis. The partial employment of artificial means of subsistence, for example, is not sufficient to remove a people mainly dependent on natural resources out of the savage class[2]; and it is almost superfluous to remark that the fact that a people mainly dependent on artificial resources also have recourse to certain natural sources of food supply does not necessarily lower it to the savage class. The question to be considered, in drawing a line between this class and those above it, is whether natural or artificial subsistence is the substantial basis of life. In drawing the line between barbarism and civilisation, the essential differences which distinguish the two classes are less easily ascertained, because, while the change which they indicate is less prominent on the surface of life, they cover a much wider space than that covered by the modes of subsistence. The general mark of advancement appears to be an endeavour to refer the phenomena of nature and society to a rational basis instead of a traditional one, and by constant interrogation of physical and social facts to penetrate the secret laws which govern them, and to effect progressive improvements in the position of man in relation to them[3].

[1] These terms are used in a strictly technical, not a popular, sense. The Greenlanders, for instance, have to a large extent acquired from external influences the moral character of civilised people, and ceased to be savages in the latter sense, though from the necessities of their climate and soil they must always be such in the former. Savagery, in the technical sense, admits of many degrees, which may be readily measured by physique and intelligence.

[2] The allusion is primarily to the maize-growing tribes of eastern North America, who appear to have been in some places on the verge of shifting the basis of subsistence, even where game was still abundant, and in some instances (as on the lower Mississippi, where game had become scarce) to have actually passed the line of demarcation between savagery and barbarism. But even the lowest tribes of South America in most cases practise a little rude agriculture where it is possible. The Xingus of Brazil are an instance.

[3] None among the lower animals are known to have quitted their traditional basis within historical times, though many pursue up to a certain point the same method which has conducted man to civilisation, the storage of the

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Such endeavours, which are implied even in the lowest advancement, were doubtless at first unconscious: and when they are made consciously and deliberately, civilisation has commenced. Barbarism advances little or no farther than the application of this principle to the modes of subsistence: and it thus occupies a middle place between savagery and civilisation, having the material basis of the latter and the intellectual basis of the former[1].

Food and the food-surplus.

Starting then from pure savagery, and considering the human species as progressively advancing from a traditional to a rational basis of thought and action, it is natural to find this change operating in the first place on the mode of aliment. For whether man is savage or civilised, food is his

natural food-surplus. The only species besides man, which has ever advanced to the artificial production of food, appears to be the ant. The leaf-cutting ants of Central America (*Oecodoma*), according to Mr. Belt ('Naturalist in Nicaragua,' 2nd ed. 1888, pp. 71–84), grow in the subterraneous chambers of their enormous formicaria large quantities of a minute species of fungus, on which they chiefly feed: 'they are in reality mushroom-growers and eaters.'

[1] In endeavouring to group human societies with reference to their degree of advancement, we are hampered by the want of an ample and precise terminology. To express a long series of gradations we practically possess only the three terms used in the text. Ethnologists usually eke out this scanty nomenclature by subdividing savagery and barbarism. Thus the Fuegians are ranked as 'low' savages, the Esquimaux as 'high' ones: the negro peoples (even the most advanced) of Africa rank as 'low' barbarians, the ancient Mexicans and Peruvians, though their alimentary basis was much more limited, as 'high' ones: while the modern Chinese, and the ancient Assyrian and Babylonian, rank as 'low' civilisations. The late Mr. Lewis Morgan's ingenious subdivision of each of the lower stages into an 'old,' a 'middle,' and a 'late' period is an essay in the right direction, but his results cannot be regarded as satisfactory, much less as final. According to Mr. Morgan, the early gradations of advancement are arranged as follows:—

SAVAGERY.	'OLD,' from the infancy of the species to the knowledge of fire and fish-food.
	'MIDDLE,' from fish-food to the use of the bow and arrow.
	'LATE,' from the bow and arrow to pottery.
BARBARISM.	'OLD,' from pottery to domesticated animals in the Old World, and to the culture of maize and other plants by the method of irrigation, in the New.
	'MIDDLE,' from the domestication of animals to the smelting of iron ore.
	'LATE,' from the working of iron to hieroglyphs on stone, or phonetic alphabets.

Houses and House Life of the American Aborigines, p. 43. Cp. the same writer's 'Ancient Society' (1877), pp. 19–27.

prime necessity. Food, we may be sure, during thousands of years occupied the largest space in man's mental area of vision. The necessity of providing food led primitive man to invent his first weapons and implements; to unite in aggregates more or less large for the purpose of discovering and securing it; to penetrate solitudes and to navigate waters previously unknown to him in search of it, until at a very early period in his history he had reached every part of the four continents which was capable of yielding it[1]; and strained his mental and physical powers to their uttermost in the effort of winning it[2]. The provision of food, then, is the primitive

[1] 'Antiquaries,' says Lord Kames (Preliminary Discourse to Sketches of the History of Man), 'constantly suppose a migrating spirit in the original inhabitants of this earth; not only without evidence, but contrary to all probability. Men never desert their connexions nor their country without necessity; fear of enemies and of wild beasts, as well as the attraction of society, are more than sufficient to restrain them from wandering, not to mention that savages are peculiarly fond of their natal soil.' The learned writer goes on to attribute migrations in general to factions and civil wars in the first instance, to commerce in the second. A century ago it had not been demonstrated that savage man had spread in the remotest times into every part of the world. Commerce, though it goes back to times more remote than is generally supposed, can have had no share in this primitive dispersion; and war, as was well expressed by Lucretius, speaking of the savage state (Lib. V. v. 997) belongs to a definite grade of advancement:

'At non multa virum sub signeis millia ducta
Una dies dabat exitio.'

The lowest savages are generally harmless and peaceful. This will appear more fully in the sequel. The quest of food is long anterior to these causes; and we must undoubtedly resort to it in order to account for that vast movement of the species which before the dawn of history spread mankind over every part, where subsistence was obtainable, not only of the four continents, but of such islands as could be reached by the methods of primitive navigation. It is impossible to trace the epoch when any part of the continents received its first inhabitants. It is otherwise with those islands and island groups which are at a considerable distance from the continental shores, a fact on which in the sequel an argument as to the ethnological affinities of the American aborigines will be based.

[2] The steps by which language was developed are still obscure: but it may reasonably be concluded that the food-quest had a considerable share in the process, and that not long after emotional exclamations and demonstrative names came primitive adjectives signifying 'good' and 'evil,' applied to animal and vegetable species with reference to the purpose of food, in the sense in which the African guide divides all plants into 'bush' and 'good for nyam' (the latter including the eatable ones, the former the residue). In the dis-

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form of labour; its accumulation is the primitive form of wealth. And even in the highest stages of civilisation, all wealth can be ultimately resolved into the elementary form of food. All permanent forms of wealth simply represent the food which has sustained the labour which has produced them, including that of the subordinate labour which has ministered to that producing labour; while the floating wealth of the world, unless, indeed it is simply exchanged against permanent wealth, cannot possibly be employed in any other way than in the purchase of food. But although the elementary form of wealth, it can only assume this form when it is not required for immediate consumption. Wealth necessarily implies that its possessor can command a surplus beyond his immediate requirements; and the elementary form of such a surplus is the food-surplus. This earliest of economical institutions has its origin in an exigency which is common to civilised and to savage life. The savage can no more live from hand to mouth than the civilised man; for when hunger actually presses it is manifestly too late to form a hunting expedition, or to go in search of roots and berries. Man therefore adopts the practice, known to some of the lower animals [1], of saving for future consumption a portion of certain periodically recurring food-supplies; and from providing for that portion of the year during which the food-supply ceases he advances to providing for years of scarcity. Food

covery of the qualities of plants women had the largest share, the males being occupied in hunting (cp. Gen. ch. iii. v. 6). The Bible (Gen. ch. ii. vv. 19, 20) represents the naming of food-animals as the first effort of speech; and the quest and choice of food is of the substance of all its early incidents (ch. iii, iv). Cp. Herodotus Euterpe, ch. ii. Though the Tupi can only count up to 3, Von Martius gives 1224 Tupi words for animals and their parts.

[1] We cannot doubt that man derived hints as to the storage of the food-surplus from the lower animals. See the description of the root stores of the Siberian field-rat (*Mus oeconomus*), Pallas, Voyages (4to, Paris, 1793), vol. iv. p. 272, which the Tunguses, following the example of the wild boar, eagerly search for as a source of food supply. Buffon, who had made the study of the habits of the field-mouse a specialty, denies to this, and to all food-storing animals, any rational method, because they do not accumulate food in proportion to their probable or possible needs, but invariably fill up whatever cavity they happen to have sheltered in. So of ants and bees. Touching the latter, he insists that man profits, not by their intelligence, but by their stupidity.

thus accumulated obviously enables its possessor to employ his own labour and that of others, in some other way than food-provision. The food-surplus, therefore, is the foundation of all non-food-producing labour; and advancement is always marked by a progressive increase in the quantity of non-food-producing labour, and by the multiplication of the forms which labour of this description assumes. The more highly organised the community, the more numerous and diversified these forms become; but as the scale of advancement is descended they become fewer and fewer until in the lowest stage of all the energy of man, like that of the lower animals, is found to be entirely absorbed in the task of food-provision, and engaged in no forms of labour other than those which contribute directly to that object. Advancement, therefore, presupposes a food-supply more than sufficient to maintain the labour devoted to producing it. The larger the surplus of food, above what is required to sustain the food-providing labour, the larger the proportion of labour which can be employed otherwise than in food-provision; and the larger the proportion of labour actually so employed, the more advanced is the community[1].

Method of Artificial Production.

But the method of procuring food from natural sources alone is toilsome, and extremely uncertain. So long as this method is relied on, even if the food-surplus can be maintained at the extent necessary for security against famine, it cannot be increased to that necessary for any considerable increase of population, nor for the maintenance of a large proportion of the community in forms of labour not devoted to procuring the food-supply. In order that this stage may be reached, man must enter on a new path, and have recourse to the provision of food by artificial means. This is effected by the simple expedient of not only abstaining from some portion of the food-surplus, but converting the portion abstained from into a fresh source

[1] Food may be said to be 'the raw material of labour' (Professor Thorold Rogers). It might, perhaps, be more properly described as the fuel by the consumption of which labour is generated, labour as the working force which drives the social machine, work as the origin of value and the efficient cause of wealth, wealth as the instrument of advancement.

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of increase. Instead of being merely stored, seeds or roots are allowed to fructify in the earth, and the captured young of animals are allowed to grow to maturity and become the progenitors of others[1]. It is obvious that even the partial substitution of artificial for natural food-supplies produces an economy of labour. The former are cheaper than the latter; that is, an equal quantity can be provided by a less expenditure of labour. It is less laborious, that is, cheaper, for the women of the tribe to form artificial plantations of seeds and roots, than to search far and wide for natural supplies; and it is in the same sense cheaper for the hunter to form a tame herd, than to scour the forest or prairie in search of wild ones. When the methods of artificially producing food have once been discovered, the tendency will therefore be to extend them more and more, and ultimately to rely on them as the chief basis of subsistence. But this tendency is subject to an obvious check.

Prevalence of Savagery in the New World accounted for.

The number of animal and vegetable species which can be profitably propagated by artificial means is a limited one, collectively bearing a small proportion to the number of those on which man subsists in their natural state, and they were previously to the Discovery unequally distributed over the globe. This unequal distribution corresponds exactly with the unequal areas of the three oikoumenai. The greatest number belonged to the Old World, those

[1] 'Necessity,' says Lord Kames (Sketches, Book I, Sk. 1) 'the mother of invention, suggested agriculture. When corn (add leguminous plants and roots) growing spontaneously was rendered scarce by consumption, it was an obvious thought to propagate it by art; nature was the guide, which carries on its work of propagation with seeds which drop from a plant in their maturity, and spring up new plants... As consumption of food (game) increases with population; wild animals, sorely persecuted, become not only more rare, but more shy. Men, thus pinched for food, are excited to try other means for supplying their wants. A fawn, a kid, or a lamb, taken alive and tamed for amusement, suggested flocks and herds.' Add that, before the cultivation of roots and corn, man had already followed the natural process by which fruit trees are multiplied. Lucretius (Lib. V. v. 1360):

'At speciem sationis, et insitionis origo
Ipsa fuit rerum primum Natura creatrix;
Arboribus quoniam baccae glandeisque caducae
Tempestiva dabant pullorum examina subter.'

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of America were fewer, and Australia had none at all. Besides this general inequality of distribution, there was a still greater inequality in the distribution of the animal species available for domestication. Species coming under this description abounded in almost every part of the Old World; while America was not only scantily provided with them, but, with the single exception of the dog, they were confined to limited areas. Besides the dog, America at the Discovery possessed only three such species of any economical importance; the reindeer, confined to the extreme north, and the llama and paco, confined to the Andes south of the equator[1]. The greater part of the New World, it thus appears, was devoid of animal species capable of conversion into a substantial basis of subsistence. Vegetable species capable of conversion into such a basis

[1] The animals which are of first-rate economical importance are the ox, horse, ass, camel, sheep, goat, and hog. The genera to which these belong were all represented in the early fauna of the New World. But the horse, like the elephant, at the time of the Discovery, and for thousands of years previously, was only represented by the fossil remains of extinct species (Darwin, 'Journal of Researches,' Oct. 5, 1833). The ox, sheep, goat, and hog were represented by living species—the bison (*Bos Americanus*) and musk-ox (*B. moschatus*), Rocky-Mountain goat (*Capra Americana*), big-horn sheep (*Ovis montana*), found as far south as the Californian peninsula, and peccari—all incapable of domestication (though Bates found tamed peccaris among the Indians on the Amazon River). The reindeer is common to both worlds, while the camel of Asia is represented by the auchenias (llama and paco) of the Andes. The reindeer and auchenias are not only far below the large domesticated animals of the Old World in economical value, but their habitat is in each case a narrow one. The animals mentioned above exhaust the list of those bred for food and other economical purposes, except rodents and birds. The domesticable rodents were represented in America by only two species; the rabbit of Mexico, which appears to be precisely the same species with the European rabbit, but was not domesticated; and the prolific ccoy or Peruvian guinea-pig, which was largely bred for food and as a cheap sacrifice. The domesticated birds of America constitute an important group, and their comparative value is enhanced by the poverty of the New World in mammalia capable of domestication. The most important was the turkey (Mex. *masc. huexolotl. fem. totolli*) which was bred in great numbers throughout Central America and Mexico, and received divine honours. Throughout the same district various species of the pheasant were domesticated (there were three in Mexico, the *tepetototl*, the *coxolitli*, and a third called by the Spaniards gritones or 'screamers'), and in Central America there were besides the pheasant (*sacachuele*), domesticated partridges and pigeons. The Peruvians bred a domestic goose (*ñuñuma*). The dog, as a food-animal, is considered in a subsequent note.

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were not wanting, and in every suitable part of America were to some limited extent the subject of cultivation. But man always prefers animal food when he can procure it[1]. His main reliance therefore continued to be the natural supply of game and fish; and he therefore continued in the savage state, wherever and so long as this supply remained unexhausted.

Unequal value of food-animals and plants in relation to advancement.

The species capable of artificial propagation, in addition to this important inequality of distribution, exhibit inequalities which are less easily measured. While all artificial production is favourable to advancement, the animal and vegetable species to which it is applied are favourable to it in unequal degrees. Their value in this respect appears to be measurable by two different standards, by the recompense which they return to labour, and the stimulus which they give to ingenuity. When this principle is broadly applied to the two divisions of food-animals and food-plants, the result appears to be that while the domestication of animals yields the greatest immediate return, the culture of the food-plants gives ingenuity the greatest stimulus. But the full effect of artificial food-production upon advancement is only produced when the breeding of animals, useful not only for food but for labour and clothing, is combined with the cultivation of productive cereals. When this takes place, progress is accelerated, as it were, in a compound ratio; and it may be said that while the design and the construction of the lines of advancement is due to the latter, the motive force which has carried man forward on these lines has

[1] This law also leads to the important deduction that where man has the opportunity of choosing between an animal and a vegetable basis of artificial subsistence, he invariably chooses the former. Examples are the ancient Germans, Gauls, and Britons, and the pastoral peoples of the Old World generally. This is in accordance with the economical law just alluded to. Wherever natural means of subsisting domesticated animals abound, herdsmanship must be cheaper than agriculture, because an equal amount of labour will produce a larger quantity of food. In countries which contain land suitable for sheep-runs and cattle-pastures, it is not until these are fully stocked that man begins to lean on agriculture for support. Other things being equal, agriculture therefore advances most rapidly where physical conditions are unfavourable to herdsmanship.

been derived in the largest degree from the former. Of the two great factors in advancement, herdsmanship has most largely contributed to wealth, agriculture to science. When the principle above indicated is applied to the groups of species within each of these main divisions, the result seems to indicate that their value is usually proportionate to the difficulty of reducing them to an artificial basis, and that the earliest and easiest conquests of human ingenuity over the realm of nature are of less value than the later and more difficult ones.

The Dog in relation to advance ment.

This may be illustrated from the most widely diffused, as well as the most easily and generally domesticated among the animals, namely, the dog, who appears in human history in a succession of characters. At first the dog, himself a hunter, appears as a mere parasite, attracted, no doubt, to the hunting-grounds and encampments of savage man by the prospect of sharing his repast. In virtue of his capacity as a hunting animal, the dog next became the companion and assistant of hunter man; and from this the transition is easy to his employment as an assistant in the pastoral life. As a labouring animal the dog is feeble, except where ice or continuously frozen snow surfaces furnish a natural railway for draught; but in the northern latitudes where this happens he is largely employed in this way[1]. Lastly, the dog is employed as a food animal, usually in default of others of greater value. To some extent this appears to be traceable to his having accompanied man from districts abounding in game to others where it exists in less abundance, or not at all, owing either to original deficiency in the game species, or to their having been in the course of time hunted down[2]. Such was the case in

[1] The labouring dog alone enables hunter man to occupy the 'great lone lands' of northernmost America and Asia. In both continents the fishing tribes are strictly confined to the Arctic shore; and the dog enables them to move from place to place in search of subsistence,

[2] Throughout North-America their surplus dogs were eaten by the hunting tribes. While the game disappears, the dogs multiply; and the ultimate substitution of the dog for game as a food-resource is therefore a natural result. In Western Africa the dog is eaten from choice: a fat one (according to Lander, who records his weariness of roast dog) costs more than a goat.

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Mexico and Central America, where the dog was the sole domesticated quadruped[1]. In Peru the dog occupied a less important position as a food-animal, though he sometimes served in that capacity, as in China and the Pacific islands, forming a resource supplementary in the former case to the auchenias, and in the latter to the domestic hog[2]. The dog, it thus appears, occupies a place in social life which becomes of less and less importance as advancement proceeds: a place which may be compared with that of the fruits among vegetable species[3]. In each case, from species which are widely disseminated and easily reduced to an artificial basis, an advance has been made to those whose original area of distribution is more confined, and whose adaptation to human use demands a greater degree of labour and ingenuity[4].

[1] In these districts there seem to have been four varieties of the dog, which are called by Sahagun *chichi* or *techichi*, *itzcuintli*, *xochiacoyotl*, and *tetlamin* or *teuitzotl*. The *techichi* were castrated and fattened, and their flesh sold in the shambles as in China. The Spaniards found them so palatable that the eatable dog became an extinct species shortly after the conquest. Cynophagy is a remnant of the primitive practice of eating all animals whatever, whether carnivorous or not. Besides the dog, the Kitchen-midden people in Europe ate the wolf, fox, lynx, and wild cat. Bear is still eaten in America. The lions, bears, panthers, &c., of the hunting parks of Persia and Babylonia were at least partially used as food in comparatively late times. The hams of the tiger were formerly eaten in some parts of India.

[2] Two distinct varieties of the dog (Quich. *allco*) were found in Peru; the hairless Canis Caraibicus on the coast (Yunca, *chono*), and the Canis Ingae of the sierra, to which latter variety the mummies and skeletons found in the tombs belong. The mountain tribes of the Huancas, about Xauxa, worshipped images of the dog, who was their principal food-animal, in their temples. No trace of anything of this kind is found in the advancement of Cuzco, though the dog was still used there in Inca times as a 'cheap animal' of sacrifice. The Chibcha had no dogs.

[3] The feral dogs of the towns of the East, whose varieties in form and colour prove them to be descendants of dogs once domesticated and owned, are in fact descendants of ancestors who hunted with man in early times, and have been discarded as society advanced. Mr. Crawfurd calls them 'a living record of the progress of society.' They appear to have existed in their present condition thousands of years ago. Similar feral dogs of the Canis Ingae variety still infest the streets of Cuzco in great numbers, and have to be periodically slaughtered by the municipal officers.

[4] Cuvier is wrong in his observation that the greatest triumph of man over the lower animals has been the domestication of the dog. Buffon rightly assigns this place to the horse. It may be more truly said, following Mr. Crawfurd ('Relation of Domestic Animals to Civilisation,' Trans. of London

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Poverty of the New World in Animals capable of domestication.

With the exception of the dog[1], who thus occupies a position apart from the rest, all the domestic animals are herbivorous, and were originally hunted for food. But the reduction of animals to an artificial basis of subsistence, though a simple and natural process, is one to which only a few species are amenable. By far the greater number of these species are natives of Asia, and the majority of them belong to the great mountainous region which occupies its middle zone. For this reason, it may be presumed, the human species in this district early multiplied in considerable numbers, and reached a state of advancement conspicuously above the savage state. The domestication of the ass, the horse, the ox, the camel, the sheep, and the goat, was the basis of this advancement. With the exception of the hog, an animal bred for food only, the reindeer[2], one confined to the coldest climates, and the

Ethnological Society, N. S. vol. ii. p. 399), that the dog goes more than half-way to his own domestication, and that this conquest, although the completest, has also been the easiest. The Australian natives do not breed the dog, but select a few puppies from a wild litter. These become at once domesticated, and when full grown assist the savages in the chase. They are fed as long as there is any food to give them, and when there is none the dogs hunt for themselves, always returning to their masters,—the reverse of what takes place with the horse, the ox, and the hog, which become permanently feral.

[1] The cat is another exception. It belongs to a class of non-gregarious and imperfectly domesticated carnivora who may be denominated vermin-killers, including the ichneumon, mongoose, and ferret. The employment of these animals indicates a high grade of advancement: savages kill their vermin for their own consumption. The education of the children of the peninsular Californians, according to the Jesuit Bägert, ceased as soon as they were capable of getting their own living, that is, catching mice and killing snakes, and they were then emancipated from parental control (Nachrichten von der Amer. Halbinsel Californien, 1773, p. 135). No feline species was domesticated in the New World; but the flesh of the wild cat is in some places in high esteem, as in Guiana and among the gauchos of the pampas, as that of the domestic cat is among the poor class in China. The small wild cat of Southern China is considered by Chinese epicures, after being fattened in a cage, the most exquisite species of game.

[2] Other species of deer are capable of domestication, the fallow deer of England being a familiar instance; but where animals which yield a better return are found, the domestication of the deer is soon abandoned. The Canadian moose has been sometimes tamed and taught to draw a sledge. Deer were once domesticated in India, and are so still to some extent in China. America abounds in deer; and among the most interesting of recent discoveries is that of evidence which points to the domestication of

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elephant, an animal useful only for labour, and confined to the tropics, this list represents all the quadrupeds which man has reduced to servitude, for the Oriental buffalo, confined to the hotter climates of the Old World, is but an inferior variety of the ox, while the auchenias of America, its only domesticated quadrupeds, except the dog, are but inferior varieties of the camel. The group consists of two species—the llama, a small mountain camel, useful for food and clothing material, and capable of a low degree of burden-labour; and the paco, a still smaller one, valued chiefly for its flesh and fleece [1]. Thus scantily, in comparison with the Old World, was the New equipped for the secular race towards the goal of civilisation. Instead of the ten domesticated quadrupeds of the Old World, America had only a diminutive camel, confined, like the camels of the Old World, to a limited range, and of burden-power only one-fourth of that of the weakest of its Asiatic cognates [2], and a still smaller one, practically incapable of labour! The llama being unfit for draught, it necessarily followed that the aborigines of America could never possess ploughs or wheel-carriages: a consideration in itself sufficient to account for the backwardness of aboriginal America. When we survey the food-production of America with reference

some animal of this species by the cliff-dwellers of Arizona and Colorado. See De Nadaillac, Prehistoric America, London, 1885, pp. 205, 219. Like the domestication of certain species of antelope by the ancient Egyptians (see Lenormant, Les Premières Civilisations, vol. i. p. 323), the practice was probably abandoned as being economically of little advantage.

[1] 'Llama' in old Quichua (allied to *llampu*, soft, tame) signifies herded animals in general, inclusive of pacos. The domestic llama was called by the same name as its wild cognate, *huanaco*, the correct names being *huanaco-llama* and *paco-llama*. The male was called *quispi* and *urco*. Cieza de Leon says that the females were called llama ('llaman los naturales a las ovejas *llamas* y a los carneros *urcos*.' Cronica del Peru, cap. 111). This mistake originated in the fact that the large grazing herds of full-grown llamas are exclusively composed of females. *Urco* denotes the male, *china* (allied to Tupi *cuña*) the female, of all animals. Like the Tibetan sheep, the paco can be used as a burden-animal, but it is not now so used: its power is very small, and when loaded it is very intractable.

[2] In India the average load of a camel is taken at 400 lbs. The llama cannot as a rule be safely loaded beyond 100 lbs., though its load naturally varies with the climate, the length and nature of the journey, and the capacity of particular animals.

to the materials available for supporting it, it is impossible to impute to the aboriginal race any inferiority, by comparison with the peoples of the Old World, or any lack of industry and ingenuity in utilising their materials. Setting aside the reindeer, an unprofitable animal on any soil which produces any better crop than moss, the Indians had domesticated every animal on the continent which was capable of domestication. They had reduced to culture the two most valuable roots yet known, the potato and the manioc, on which respectively the food-production of the temperate and tropical countries of the Old World now so largely depends, and, as will presently appear, they had by persevering cultivation developed from a humble culmiferous grass, that noblest of the cereals, the maize plant—a corn which proved so productive as to exclude from culture several others which might otherwise have been made bases of subsistence[1]. Confined to a limited range of objects, they had, with regard to animals, certainly made the most of their material. For further progress, man was not wanting to nature, but nature to man.

Absence in New World of milch animals.

The most important among the causes of the backwardness of the American aborigines is here foreshadowed. America was practically destitute of those animals which in the Old World were bred and fed in domestication in order to yield a constant supply of milk for human consumption. In order to estimate the effect of this privative cause, some idea must be formed of the general value of the lactiferous animals, as such, for the purposes of advancement. They fall into five groups: (1) the bovine, including all the domesticated varieties of the ox; (2) the equine, and (3) the ovine, each consisting for the purpose of the present enquiry of one principal and one accessory species, the former including the horse and ass, the latter the goat and sheep; (4) the camels, and (5) the reindeer. The last named, confined to a limited area, and of no special value as a lactiferous animal, may be disregarded[2].

[1] See note p. 305, post.

[2] Reindeer's milk produces fair butter, and, according to Moleschott, a hard, white cheese. A species of white deer was formerly bred for milking in India.

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The camel, one of the most valuable among the milch animals, is confined to tropical and subtropical climates[1]; and the llama, its transatlantic representative, refuses to yield its milk to man. The milk-culture of the equine species belongs to particular localities, and to an early stage of advancement. Sheep have more valuable functions to perform than the yielding of milk, and are only occasionally used for the purpose by way of supplement to other supplies. The goat alone rivals in any appreciable degree the bovine species as a milk-yielder, and this chiefly in poor or elevated districts, where the cow is sustained, if at all, with difficulty. The latter animal alone, over a vast area, and even to the latest stages of advancement, has furnished man with a continuous supply of the most perfect and nutritious food known, and is entitled to be called the foster-mother of man. The bovine and ovine groups were represented in the New World by species incapable of domestication[2]; and the camels by species which, though domesticated, were valueless for milch purposes.

Effect of milch animals on population.

It is the peculiar property of milk and its products that they alone furnish the human species with a food which is not only absolutely sufficient for sustenance, but is available for use from the earliest period of existence. The consequences of this are weighty and far-reaching. In the absence of extraneous milk supplies, the human young must even in domesticated life be suckled during two or three years before it can safely be put upon other aliment; and in the laborious life of hunting tribes it is impossible for the mother to undertake the care of a second infant until the first is able to take considerable journeys on foot by her side. It is obvious, then, that the provision of constant and ample supplies of milk, by abridging and partially superseding natural lactation, enables the species at once to multiply in a greatly increased proportion, as compared with its normal rate of multiplication under the conditions of natural alimentation.

[1] Camel's milk is largely used throughout Northern Africa, and in Arabia and India. It is drunk fresh, or mixed with flour into a paste. In North Africa horses are fed and thrive upon camel's milk.

[2] See note to p. 283, ante.

Beyond this, the milch animal, bred in herds which are easily driven from place to place, furnishes in the shape of flesh, butter and cheese[1] to adult man an alimentary series equal in sufficiency to the milk supply which sustains the infant, and far cheaper, in the sense of requiring less labour, than the products of primitive agriculture. These facts form the economical basis of the existing settlement of the Old World. From China in the east to Spain in the west, and from the Cape of Good Hope in the south to the limits of artificial food-production in the north, the sovereignty, and in most cases the beneficial ownership, of its principal countries has been for centuries vested in the descendants of cattle-breeding tribes, whose possession is due to a superiority of numbers, physique, and organisation which enabled them to overwhelm less numerous and robust peoples who had chiefly followed the path of advancement based upon agriculture, and whose agriculture had come to depend mainly on the labour of slaves. Throughout the Old World, while the habits and methods of herdsmanship, based on the subjugation of its numerous domesticated animals, have been eminently favourable to range of locomotion, to military organisation, and to the dissolution of the tribe and the creation of the nation, the use of milk has proved a constant cause of numerical increase, and that of milk products an important supplement to the basis of aliment. In the New World the only animals capable of pastoral treatment were of less value, were confined to a limited area, and being useless for milch purposes, scarcely tended to any greater increase of population than would have resulted from their multiplication in the wild state. In order to under-

[1] The development of milk-products (especially the making of cheese, which is simply the curd of milk dried and salted), on which the advancement of the Old World has so largely depended, may be traced to the storage of the surplus, especially with regard to the winter, when the yield of milk is, in temperate climes, reduced in consequence of the stoppage of the growth of grass. Cheese is supposed to have been made by the Swiss lake-men. In tropical climates, where the supply of food is more uniform, especially in Africa, which is by eminence the continent of cattle, cheese is less frequently made, the vast supplies of milk being either consumed quite fresh, or in the form of fresh curds. Africa abounds in vegetable fats, which are of greater value than butter, and are universally preferred to it.

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stand the effect of these restrictions, it will be proper to consider more at length the nature of the animals on which the limited herdsmanship of aboriginal America was based.

The llama—antiquity of its domestication.

The llama, in its wild state called the huanaco [1], is a native of all the cold regions of South America, and is found not only in all parts of the sierra from the Strait of Magellan to the equator, but in great numbers in Tierra del Fuego and the plains of Patagonia [2]. It usually congregates in small herds of from half a dozen to thirty; but it has been seen in herds numbering at least 500 [3]. Though wild and extremely wary, it is little capable of self-defence; and, though a large animal, is easily kept at bay by a single dog until the huntsman comes up. It is very easily tamed; and from the great variety in colour (though not in shape) exhibited by it in a state of domestication, must have been subjugated by man at a very remote epoch [4]. According to Peruvian legends, the solitary sur-

[1] I follow Buffon and Darwin, in preference to Von Tschudi, who regards the domesticated llama and paco as varieties different from the wild huanaco and vicuña. The name *huanaco* (animal stercorarium) refers to the habit, common to all the auchenias, of making their deposits in large heaps, which serve the Indians as stores of fuel. *Uicuña*, the name of the smaller auchenia, has the same meaning. *Paco* means a perforation in the ear: the Inca warriors thus distinguished were called *pacuyoc*, *pacurincriyoc* (Spanish, orejones). The paco (prop. *paco-llama*), being less perfectly domesticated than the llama, is or was commonly led by a string passed through the ear.

[2] The larger auchenia is here spoken of inclusively. Like the wild camel in the Old World, the wild huanaco has long been extinct in Peru, though it still exists in the mountains of Chile and the Argentine Republic. The vicuña, which gives the hunter incomparably more trouble, alone remains. The llama herds, laden with merchandise, are taken to the hot lowlands, and will live there for a short time, but cannot be long kept or acclimatised there. Like the huanaco, the llama thrives best at from 10,000 to 13,000 feet elevation: the paco, like the vicuña, at from 13,000 to 15,000 feet.

[3] The domesticated llama is herded in large numbers, a single drove laden with merchandise, and containing from 500 to 1000 head, being managed by eight or ten Indians.

[4] The colour of the wild animal is a dark chestnut; that of the domesticated has shades of yellow and black, frequently speckled, and is sometimes pure white or black. The original method of its domestication, the formation of a tame herd out of captured young (*uñacuna*), is indicated by the mode in which the herd is still formed. The uñacuna, after remaining a year with the dam, are herded together until the fourth year, when the males and females are separated, the former being put to labour, the latter depastured in herds for breeding. The labouring llama is in its prime until its twelfth year, after which it decreases in value, and is slaughtered about its fifteenth.

vivor of the great deluge was warned of the approaching catastrophe by his llama[1], and llamas accompanied the

[1] The deluge-legend found by Father Avila (1608) current among the Indians of Huarochiri, the district of the upper Rimac, near Lima, is sufficiently interesting to be given in full :—

'An Indian was tethering his llama in a place where there was good pasture, and the animal resisted, showing sorrow and moaning after its manner, which it does by crying *yu, yu*. The master who happened to be eating a *choclo* (ear of maize), observing this, threw the core (which they call *coronta*) at the llama, saying, "Fool, why do you moan and refrain from eating? Have I not put you where there is good pasture"? The llama thus replied: "Madman! what do you know, and what can you suppose? Learn that I am not sad without good cause; for within five days the sea will rise and cover the earth, destroying all there is upon it." The man, wondering that his llama should speak, answered it by asking if there was any way by which they could save themselves. The llama then said that the man must follow it quickly to the summit of a high mountain called Villca-coto, which is between this parish (San Damian) and San Geronimo de Surco, taking with him food for five days, and that he might thus be saved. The man did as he was told, carrying his load upon his back, and leading the llama; and he arrived on the summit of the mountain, where he found many different kinds of birds and animals assembled. Just as he and his llama reached the top, the sea began to rise, and the water filled the valleys and covered the tops of the hills, except that of Villca-coto: but the animals were crowded together, for the water rose so high that some of them could hardly find foothold. Among these was a fox whose tail was washed by the waves, which they say is the reason that the tips of foxes' tails are black. At the end of five days the waters began to abate, and the sea returned to its former bounds; but the whole earth was without inhabitants except that solitary man, from whom, they say, descend all the people who now exist. This (adds the padre) is a notable absurdity, for they do not say that any woman was saved; and they make out that the man had intercourse with some devil: and as the Commentator of the Books of the City of God (St. Augustine) says, they glory and rejoice like some others of those times, at being the sons of a demon.' Markham, Narratives of the Rites and Laws of the Incas, p. 132.

Molina records a similar legend in the Cuzco district (Ancasmarca), according to which a herdsman and his six children, warned by the llamas, were saved on the top of a mountain, which the flood did not reach. Another deluge-legend, current in the coast-valleys (Zarate, Hist. del Descub. y Conq. del Peru, original ed. ch. 10), dates from an earlier period (that of the dog). According to this, the Indians, accompanied by their dogs, sought refuge in caves high in the mountains, taking with them stores of provisions, and making the entrances of their shelters watertight. The dogs were sent forth when the flood was believed to be abating, but at first returned dripping with water, and showing no signs of mud. Not till the dogs returned covered with mud did the Indians venture from their shelters. The tradition of the deluge (i.e. the floods consequent on the break-up of the ice of the glacial period, which, according to Mr. Belt, The Naturalist in Nicaragua, 2nd ed. p. 356, lay more thickly along the American Continent, in its whole length, than elsewhere), called in Quichua *pacha-cuti* ('destruction of the earth'), was universal in America; as to Peru, compare the statements of an hereditary *quipo-camayoc*

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mythical hero Manco Ccapac and his brothers and sisters, when they issued from the cave of Paccari-tambo[1]. The significance of the latter legend cannot be understood without some reference to the geographical line of advancement in the Peruvian sierra. As will shortly appear, it began in the Collao, or basin[2] of Lake Titicaca, whence it spread northwards, under the Incas, to the Cuzco district, and southwards and eastwards to the Bolivian Alta-planicie. The tribes of the Titicaca basin, properly known as the Colla, but more generally as the Aymara, were the first in order of advancement; and it is to them that the subjugation of the llama[3] is due. Aymara colonists, afterwards so well known as the Cuzco Incas, migrating in the form of the joint undivided family[4], carried the maize plant and the domesticated llama northwards to the district of Cuzco, where their first settlement was at Paccari-tambo. The lateness of the Cuzco settlement is definitely marked by the circumstance that while the llama, especially the white one, was the principal sacrifice-animal of the Incas, and prominently figured in religious ceremonies, the animal itself was not in Cuzco an object of worship, as we know it to have been throughout the Collao. The Aymara or Colla universally worshipped the white llama as their special god. They believed that a

or registrar of the Incas, given in Oliva's Hist. du Pérou (by Ternaux-Compans, Paris, 1857), chap. 3. *Pacha-cuti* was assumed as a 'strong name' by the Apu-Ccapac-Inca to whom the extension of the Inca domination and the resettlement of the religious system were mainly due (the great-grandfather of Huascar, Apu-Ccapac-Inca at the time of the conquest).

[1] In memory of this, four large figures of llamas, two of gold and two of silver (*ccuri-napa* and *collque-napa*), with cloths over the loins, were carried in procession on litters by Incas of high rank, richly dressed, at the great feast of the Sun (*Intip-Raymi*). Molina, ap. Markham, Rites and Laws of the Incas, p. 19.

[2] The 'interior' basin of Titicaca, a plateau 13,000 feet high, and from its size and elevation the most prominent part of the chain of the Andes, is the South American counterpart of that of Utah. Neither has any outfall to the surrounding lower districts and the oceans. Both are about equi-distant from the junction of North and South America.

[3] The wild huanaco was at this time found throughout the sierra, and was regarded by the Indians as autochthonic, like themselves. The *paccarisca*, or place of origin of the llama, was in the Chanca district supposed to be the two lakes of Choclio-cocha and Orco-cocha, the sources of the Pampas river (Arriaga, Extirp. de la Idol. del Piru, p. 45).

[4] See Maine, Early Hist. of Institutions, p. 116.

white llama dwelt in the 'upper world' or heaven (*alag-pacha*), and, in their own words, that 'he loved them more tenderly than the other Indians, because he made their flocks to multiply more abundantly.' To the white llama the Colla therefore sacrificed; a worship anterior to that of the sun, which came in with maize culture, and probably second in order to the primitive worship of natural features (rocks, caves, and rivers), which they shared with other primitive peoples[1].

Basin of Lake Titicaca.

The hunters of Patagonia and Tierra del Fuego, who chase the huanaco for the double purpose of food and clothing, its pelt being their only protection from the weather, may serve to convey some idea of the hunter population of the basin of Lake Titicaca[2], whom the domestication of the llama and paco converted into the Colla herdsmen of

[1] Garcilasso de la Vega, Lib. II. chap. 19.

[2] So called from the rocky island off the northern point of the peninsula of Copacabana, near the middle of the lake. This famous island was the most sacred spot in Peru. 'To it the Incas traced their origin, and to this day it is held by their descendants in profound veneration.' (Squier, Peru, p. 331.) The etymology of the name affords a curious instance of the superficial treatment which American history has received. *Caca* in Quichua means rock; *titi* means (1) jaguar or ounce, (2) the metal, lead. Hence the name has been always explained as 'Rock of the Jaguar,' an animal never seen within a hundred miles of it, and as 'Rock of Lead,' a metal which the island does not contain! These etymologies, together with the idle myth which has been invented to explain the former of them, are repeated even by Mr. Squier, although he quotes the very passage of Cieza de Leon which indicates the true explanation. Acosta, who lived on the spot three hundred years ago (De Nat. Novi Orbis, Lib. II, cap. 6), distinctly states that the original name was *Intiticaca* ('Rock of the Sun'); and he is corroborated by the anonymous Jesuit author of the valuable tract 'De Las Costumbres Antiguas de los Naturales del Piru' (printed in 'Tres Relaciones de Antigüedades Peruanas,' edited by Señ. De La Espada, Madrid, 1872, p. 164). The true form of the word is probably INTITA-CALLCA (Old Aymara, 'Grave of the Sun'), the allusion being to the form of the legend mentioned at the end of this note. The Quichua word *caca* (properly *cacca*) is not admissible to explain the name, the corresponding Aymara word being *cala*. According to the current legend, the sun, moon, and stars, at their creation, ascended into the sky from this island, from which, in fact, seen from the Chucuito shore, they appear to rise daily. Cieza de Leon, Cronica, cap. 103:—'Cuentan estos Indios que sus antiguos lo afirmaron por cierto—que carecieron de lumbre muchos dias, y que estando todos puestos en tinieblas y obscuridad, salió desta isla de Titicaca el sol muy resplandeciente, por lo cual la tuvieron por cosa sagrada,' &c. Acosta (Lib. I. chap. 25) has preserved the legend in a more definite form. The sun hid himself from the great deluge in the island of Titicaca, and was thus preserved from destruction.

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to-day. That these hunters were themselves intruders is indicated by the presence of a low fishing people calling themselves Urus [1], who once occupied much of the southern shore of the lake and some of the adjacent islands, but now exist only on the broads or *totorales* of the Desaguadero, the deep stream which conveys the superfluous waters of the Titicaca lake to the lower one of Oruro. Those lakes of the great American mountain range which are situated within the tropics, it may here be noticed by way of anticipation, appear to have been the earliest permanent seats of settled populations. When we enumerate the lakes of Mexico, Mechoacan, Itza, Nicaragua, Guatavita, Chinchaycocha, and Titicaca, we, in fact, enumerate from north to south the principal seats of the earliest aboriginal advancement, the most important being the northernmost and southernmost, those of Mexico and Titicaca respectively. This is evidently due to the fact that these lakes have offered to advancing humanity exceptional advantages in regard to its two prime necessities, food and defence [2]. The great lake of Titicaca yields an abundant supply of excellent fish; it swarms with aquatic fowl; the rich pastures of *ichu*, which sweep from its margin upwards to the snowline, afford subsistence, not only to the auchenias, but to small game of various kinds; its shores, when cleared of stones, are admirably adapted for the culture of the food-roots of temperate South America. The want of timber is compensated by the resinous tola shrub (*ccapu*), which yields a

[1] The name means in Quichua insects or vermin, and was probably bestowed on them, with reference to their mode of subsistence, after the Inca conquest. Low peoples have a keen perception of the grades of advancement. The Esquimaux of Repulse Bay held the people of Southampton Island 'in the most sovereign contempt, considering them as savages, and as vastly inferior to themselves' (Lyon, Private Journal, 1824, p. 345). It is possible that the name may be older, but in any case it denoted some animal. The original language of the Urus (Puquina) differed widely from both Aymara and Quichua. The account of the Urus given by Acosta, in whose time they were more numerous and still occupied a large area, will be found in the next note but one.

[2] Compare the inland seas in the Old World. The earliest purely European advancement apparently took place in the lake valleys of Switzerland and other countries of Southern Europe; and the same could to some extent be shown of Asia and Africa.

supply of fuel, and by the stout and luxuriant reeds (*totora*) lining its margin in vast beds, which served the primitive inhabitants, according to Acosta, for food, fuel, and material for clothing and building, and are still largely employed in making floats for navigation. Stone available for building exists in unlimited abundance, and the *ichu* affords a durable material for thatching. While the islands which it contains have a somewhat higher temperature than the average of the shore, adapting them in a higher degree for agriculture, their situation is especially favourable for defence. It is not strange, then, that the hunters who pursued the huanaco and vicuña to the Titicaca valley should have sought to make this desirable district their permanent home[1].

Economical value of the auchenias.

Besides certain miscellaneous purposes to which particular domestic animals are applied they are as a group mainly useful as furnishing man with (1) food, (2) clothing material, and (3) labour; to these purposes they have evidently been adapted in the chronological order in which they are here named. Primarily hunted for food, and secondarily for cloth-

[1] *Collao* is a Quichua corruption of the Aymara *Ccollaui* (1) 'cultivated land,' (2) 'land of happiness,' 'wealth,' or 'health'—'Peruvia Felix.' Acosta describes it as being in his time by far the richest, healthiest, and most populous district of America. Its importance has decreased as advancement has proceeded. In his time many of the islands showed traces of cultivation, and his account of the use made by the primitive inhabitants of the totora or lake-reed, is noticeable. 'Insulas habet, olim habitatas et fertiles, nunc desertas; producit uberrime junci genus, quod indigenae *totoram* vocant, cujus plurimus ipsis usus est. Nam et cibus est suibus, jumentis, ipsisque hominibus perjucundus, et domus, et focus, et vestis, et navigium, et omnia pene vitae humanae subsidia una *totora* Uris praestat; hoc enim accolis est nomen. Ii adeo se ab hominum caeterorum consortio et opinione alienarunt, ut interrogati aliquando, qui sint, serio responderint, se non homines esse, sed Uros, quod genus ab humano diversum esse sentirent. Urorum reperti sunt populi integri in medio lacu habitantium scaphis quibusdam junceis, quibus inequitant, simul connexis, et ex una aliqua rupe aut stipite religatis. Unde interdum solventes totus populus subito patriam mutat.' De Nat. Novi Orbis, Lib. II. cap. 6. In connexion with the decreased importance of the lake, it should be stated that the volume of its water has within historical times considerably diminished. At one time it extended to Tiahuanaco, then its principal port, and the point of connexion with the llama routes (1) over the Tacora pass to the Pacific, (2) eastward to the warm valleys (Yungas) where coca was cultivated, and the auriferous river of La Paz, and (3) to Potosi. Tiahuanaco is now twelve miles and a half from the lake, and 120 feet above its water-level.

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ing material, the same animals have been employed for the same purposes, in the same order, in the state of domestication; labour is a subsequent application, confined, as a rule, to the larger and more powerful subjugated species. No animal of the Old World, except the camel, is to any appreciable extent available for all three purposes. The camel, accordingly, within the districts where it can be profitably bred, is the most generally useful, and probably the most valuable of animals. The same variety of use marks the small camel of America, but its value is subject to the two important deductions which have been already mentioned: (1) that its labour power is less by three-fourths than that of its Asiatic cognates, and (2) that it is not available for milch purposes. As to the whole camel genus, it is true that, compared with the other domesticated genera, the camels are inferior to the rest in each useful purpose taken separately. The ox, sheep, and hog excel them as food-makers; the sheep as a purveyor of clothing material, and the ox and horse as labourers; for the camels are available only for burden, and are unfit for draught. But, in the case of the Peruvian camel, these deductions are partly compensated by the great multiplication of the species consequent on the immense facilities which the country affords for breeding it. Below the snow-line, the slopes of the Andes are clothed for a distance of some thousands of feet with a coarse grass called *ichu*, which forms the natural pasture of the auchenias. While the llama, from this cause, has enormously multiplied, the human species has not increased in the same degree; a fact due partly to the inferiority of the llama as a food-animal[1]; and especially to its uselessness for milch

[1] The flesh of the animals killed in the periodical slaughterings (see post, p. 300) was, for the most part, cut into strips and dried in the sun (charqui) for storage. Llama charqui is now apparently less common, the fresh meat being usually eaten. The old Spaniards speak of the flesh of the auchenias more favourably than most modern travellers. 'Mule meat,' says Mr. Squier (Peru, p. 312), 'especially from an animal that has been killed because he is too much reduced to travel, is not highly esteemed by epicures; but I can testify that it is preferable to that of the llama in its best estate!' The flesh of the vicuña he considers 'a possible alternative to starvation.' That of the paco is of better quality but, owing to the greater scarcity and value of the animal, is seldom obtainable. Although the economical value of the auchenias may

purposes, and partly to the fact that the llama-breeding districts are cold and inhospitable and, as will presently appear, unfavourable to the cultivation of cereals. Though Peru generally, and the Collao especially, have always been the most populous districts of South America, the human race has not increased in the same proportion as the llama: hence the animal is abundant and cheap. The poorest Indian owns one or more, and peasants of moderate means are the possessors of considerable herds [1].

Minor domesticated animals.

With the auchenias the list of animals which in any important degree contributed to advancement in aboriginal America begins and ends. Besides the dog, only one other American quadruped, the ccoy or Peruvian guinea-pig, served as an artificial food-resource. Domesticated birds were common to the Mexican and Peruvian peoples [2]. The former bred the turkey, the pheasant, and a kind of duck, chiefly kept for its plumage. This, by an art in which the Mexicans excelled, was extensively manufactured into articles of clothing, drapery, and ornament; and many wild birds were bred in large aviaries for the same purpose. The domesticated goose (ñuñuma) of Peru served chiefly as a food-resource, though of little importance; and none of these minor animals can have contributed in any great

appear small, when compared with the domesticated animals of the Old World, the llama, as was acutely observed by Acosta, is in truth one of the most profitable animals known, being practically the ass and the sheep in one, while the paco has a still higher value of a more limited kind, for no known animal approaches it in the fine quality and the abundance of its fleece. For the general purposes of advancement, the llama deserves a place in the first rank of the domesticated animals. Costing little to buy and to feed, on account of the extraordinary abundance of the ichu, and easily reared and trained to labour, it may be considered to be an animal better calculated to promote advancement in its earlier stages than the more valuable, but less generally useful, domestic animals of the Old World.

[1] A working llama can be bought for a dollar and a half, or two dollars; the paco, which is much scarcer, costs two or three times as much, and it is most difficult to induce their owners to part with them (Col. G. E. Church). The domestication of the latter animal probably dates from a later period than that of the llama, and belongs to a later stage of advancement. Its natural habitation is colder, higher, and more remote from human haunts; it is more difficult of approach in the wild state, and in the domestic less perfectly subjugated. The fineness of its wool appears to have led to its subjugation, at a time when the art of weaving the wool of the llama had made considerable progress.

[2] See ante, p. 283.

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degree to the progress of advancement. The turkey, the most valuable among them, could only be bred in large numbers through the cultivation of maize, and is therefore properly to be ranked among the products of agriculture [1].

Conversion of the auchenias into an artificial basis of subsistence.

As the population of the Titicaca valley increased, its game must necessarily have diminished, but for the establishment of precautions for its preservation. Such precautions, applicable not only to the auchenias, but to the deer species, were strictly enforced before the conquest, and were then of great antiquity. The *chacu*, or common hunt, of primitive Peru, survived within historical times. It resembled the systematic hunting practised by some civilised communities of the Old World. The hunting ground, extending over a vast area, was beaten by two large parties, who advanced to a common point, destroying all noxious and carnivorous animals, and driving the game by thousands before them into a corral or enclosure (*cancha*), where they were assorted according to their kind. The female deer, except such as were old and barren, together with a few of the most promising males, were again turned loose, an account being taken of the number by means of *quipu* or knotted cord; the residue were slaughtered. The same course was pursued with regard to the huanaco and vicuña, save that these were shorn before being suffered to escape. The flesh and wool were divided among the members of the hunting party, in proportions prescribed by tribal custom. The origin of domestication is here clearly indicated. The young, in all probability, were at first usually turned loose; but occasionally they would be carried away alive, in order to be slaughtered when of full growth. The economic advantages of retaining and allowing them to breed in captivity must then have become apparent; and the tame herds, when formed, became tribal property, and were subject to regulations based upon and nearly similar to those under which the wild ones were

[1] It should be observed, in passing, that only two out of the three principal groups of advanced communities in the New World possessed domesticated animals. The Chibcha group (New Granada) possessed none, not even the dog; their advancement was based solely on agriculture.

managed[1]. As the wild herds diminished, the tame ones increased; and by the gradual prevalence of this transforming movement, aided by the cultivation of the alimentary roots of the sierra, the potato and oca, and of the quinoa bean, the basis of subsistence was at length shifted, and man became dependent on artificial food-production[2].

Groups of alimentary vegetable species.

Before attempting to indicate the connexion between artificial food-production and advancement generally, it is indispensable to complete the survey of the modes of artificial subsistence by reviewing briefly the vegetable resources which have been made contributory to it. This appears to be the more necessary because no high degree of advancement has ever been based on either animal or vegetable food-production apart from the other of them. The higher degrees of advancement are universally based on a composite food-production, in which both animal and vegetable species have a place. Coming then to the group

[1] The management of the tribal herds will be described later on. It was based on the same principle with the chase of the wild herds, the division of the produce, in prescribed proportions, among the members of the tribe.

[2] A change so great as the substitution of reliance upon artificial food-supplies for reliance upon natural ones cannot take place at once, or in a short course of time; and everything indicates that it was brought about by very slow degrees. We know, at least, that during thousands of years tribes mainly relying on natural resources have supplemented those resources to some variable extent by artificial production, without carrying the latter so far as to shift the substantial base of subsistence. Such was the condition of the principal tribes of the forest districts in both North and South America at the Discovery; and such is still that of the Indians of the forest district of South America, and of many other populations in all parts of the world. Perhaps the substitution is never absolutely complete; for all communities which rely on artificial food-production to some extent supplement their artificial resources by natural ones. Sometimes artificial production has been begun and carried to a considerable extent, only to be ultimately abandoned. Often the food-producing art has appeared as the basis of life in districts where natural resources were comparatively scanty, and where the practice of the art was therefore necessary to the support of any considerable population. Such districts would be the natural fields for the development of the art in the hands of emigrants from neighbouring districts where natural resources were more abundant, and where the art had come into existence, but had not been extensively practised. In this way it is easy to account for the appearance of agriculture as the main basis of life in districts which would afford but a scanty subsistence to hunting tribes. But in general, artificial food-production seems to have slowly come into use in the very districts where the natural resources on which it is based were most abundant.

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of vegetable food species, it is noticeable that all the species in the group are capable of artificial propagation, and that the most suitable ones have been selected for this purpose by man himself. These have naturally been those which most quickly and amply repay the labour which the process involves. They may be arranged, in regard to this condition, in three groups: (1) trees bearing succulent fruits; (2) plants having succulent roots; (3) culmiferous or cereal grasses. It is further observable that they fall into the same order when it is sought to group them with reference (1) to the order in which man appears to have been led to appropriate them as natural bases of subsistence, (2) to the amount of labour necessary to adapt them for human consumption, (3) to the amount of labour necessary to convert them from a natural to an artificial basis, (4) to the value possessed by each relatively to their bulk and capacity for storage, and (5) to the degree in which their cultivation contributes to advancement. In all these regards the class of fruits stands lowest, that of roots occupies an intermediate position, while the cereals take the highest. Of all vegetable foods, the succulent fruits are the most obvious and attractive, and most commend themselves to the taste. The nutritive value of succulent roots is less easily discovered; that of the ripened seeds of the cereals is the least palpable of all. Fruits are ready for consumption in their natural state; roots demand a certain amount of preparation[1]; but the best mode of preparing the seeds of the cereal grasses for food (converting them into leavened bread) can only have been attained after a long experience, and is in fact the last of seven successive forms of preparation[2]. The principal fruit

[1] Roots usually require to be cooked by a considerable degree of heat: but only simple cookery, either by roasting or boiling, is necessary. Edible roots in a state of nature or nearly so, that is, those which have not been artificially developed in size and weight, are usually roasted: those which man has developed are boiled. The preparation of roots by desiccation for the purpose of storage (potato and manioc) is peculiar to America.

[2] Exclusive of corn eaten *au naturel*, whether in the green or the ripe stage, the successive forms of preparation, each of which denotes a certain stage of advancement, are as follows: 1. Green corn torrefied, and rubbed in the hands to detach the husks. 2. Ripe corn torrefied or otherwise, pounded or ground, and made into a paste. (Swiss lake-men, Britons acc. to Diodorus Siculus,

trees capable of affording a basis of subsistence are readily propagated by artificial means, the quickest being the severance and transplantation of their suckers; and this has in the case of many of them been so long practised that they have at length lost the property of ripening their seeds. The culture of roots involves more labour, for the soil must be periodically prepared for planting, and while the rude methods of primitive culture continue, a fresh clearing is required for each successive crop. The culture of the cereal grasses involves the severest labour, which lasts continuously from the clearing of the ground to the harvesting of the crop. Relatively to their bulk, fruits are of less value than roots, and roots than cereals. Fruits in the natural state keep but a short time[1]; and when dried quickly lose their savour. Roots, in their natural state as perishable as, or even more so than fruits, after undergoing appropriate forms of preparation for storage, all of which, however, involve an amount of labour disproportionate to their ultimate value as compared with cereals, can in some instances be preserved for an indefinite period. Ripe corn,

Canary Islanders. Posidonius, ap. Senec. Ep. 91, observes that this is simply artificial mastication, and traces bread-making to it.) 3. Corn steeped and boiled. (Rice in the east, and generally: furmety.) 4. Meal boiled in water (porridge). General. The favourite food of advanced barbarism: *canqui* of Dahomey, *sancu* of ancient Peru. 5. Paste rolled into thin cakes and fried or grilled, but imperfectly dried in the process. (Pancakes, and griddle-cakes. The tortilla of Mexico. Transition from barbarism.) 6. Paste baked in thin cakes. (Unleavened bread. Universal in early civilisation.) 7. Leavened bread. 'If there be any one discovery owing to chance, it is that of leaven... The world was indebted to the economy of some person or other for this happy discovery, who, in order to save a little old dough, mixed it with the new... They would no doubt be surprised to find that this old dough, so sour and distasteful of itself, rendered the new bread so much lighter, more savoury, and easier of digestion' (Goguet, Origin of Laws, &c. vol. i. p. 105). More probably leaven originated in the preference shown in hot countries for the acid flavour of stale porridge (compare the practice of adding curds to fresh milk in order to turn it sour for immediate consumption) as in the caffa or porridge-ball of Guinea, which is considered insipid while fresh (Lander).

[1] Fruit-eating savages surfeit themselves in the fruit season and are near starvation for the rest of the year. Bägert, the Jesuit missionary, who has left so interesting an account of the peninsular Californians as they existed in the last century, says that by the middle of the pitayaya season, which lasts for two months, he was unable to recognise members of his congregation who were at other times perfectly familiar to him (Nachrichten, &c. p. 56).

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stored with the care and precaution which a little experience suffices to teach, can be kept for many years. Stores of corn were the first substantial form of wealth based on the produce of the soil, and not on the possession of animals[1]. Lastly, while peoples who never advance beyond arboriculture invariably continue in the savage state, and root-growers always exhibit a somewhat higher degree of advancement, it is certain that nothing worthy the name of civilisation has ever been founded on any other alimentary basis than the cereals.

Alimentary vegetables of Old and New World compared.

The distribution between the two worlds of the vegetable resources available to man is less unequal than that of the animal species amenable to domestication: for instead of the balance of advantage being obviously in favour of the Old World, as is the case with the latter class, there appears, at the first glance, to be no preponderance in favour of either. The New World, it is true, has been indebted to the Old, since the Discovery, for the plantain, the banana[2], and the yam, all food-staples of importance in tropical latitudes,

[1] Πλοῦτος is explained by Diodorus as πλῆθος (καρπῶν): Οἱ μέν φασι τὴν γῆν σπαρεῖσαν ὑπὸ Ἰασίωνος, καὶ τυχοῦσαν ἐπιμελείας τῆς προσηκούσης, ἀνεῖναι τοσοῦτον πλῆθος καρπῶν ὥστε τοὺς ἰδόντας ἴδιον ὄνομα θέσθαι τῷ πλήθει τῶν γενομένων καρπῶν, καὶ προσαγορεῦσαι πλοῦτον. (Bibliothec. Hist. Lib. V. c. 77.)

[2] Both the plantain and the banana are believed by Clavigero, Peschel, and Belt, whom I follow, to have been introduced into America from the Old World. The contrary opinion, however, has been often entertained. Von Martius, while admitting the foreign origin of the banana, believes that plantains were cultivated by the aborigines before the Discovery; and he describes a wild species belonging to the *Musaceae* (the *Urania Amazonica, Mart.*) as growing in the hot marshes of the Amazon river, though it does not appear that this species closely resembles the plantain (Reise in Brasilien, vol. iii, p. 20). Oviedo (Sumario de la Nat. Hist. de las Indias, ch. 80) distinctly states that the plantain was introduced into the New World by the Spaniards. As to the yam, some confusion has arisen from the fact that Columbus at the Discovery (Navarrete, vol. i., pp. 238, 242, 251) mistook the manioc for the African yam, and confused it with the aje, which would appear from the descriptions of Las Casas and Oviedo to have been a variety of the sweet potato. Oviedo (Nat. Hist. Lib. vii, cap. 4) states positively that the aje and the sweet potato are generically the same, and only distinguishable by the finer flavour of the latter. Columbus in a subsequent passage (Second Voyage, Navarrete, vol. i, p. 369) observes that the aje was called by the Caribs *nabi*, which is the Carib name for the sweet potato. That the common yam of the West Indies was introduced from Africa is admitted even by those who treat the aje as belonging to the yam tribe (Reynoso, Agricultura de los Indigenas de Cuba y Haiti, p. 82).

and for all its cultivated cereals except maize. These, however, are fully counterbalanced by those indigenous food-plants of the New World which have been borrowed by the Old,—maize, the potato, and the manioc. In regard then to the capabilities of advancement, so far as it can be based on vegetable foods, the New World was at least on an equal footing with the Old. A closer scrutiny leads to the conclusion that in this respect the natural endowment of the New World was richer than that of the Old. Omitting, for the moment, the lower groups of vegetable foods, the fruits and roots, and regarding only the group on which civilisation has always mainly relied, the cereals, it is not only found that America possessed, to the exclusion of the rest of the globe, the largest and most productive, though not absolutely the most valuable species among them, but that this species existed in many varieties, having collectively a wider area of distribution than any vegetable food-species belonging to the Old World. From the great lakes in the north, to Chile and the Plate River in the south, the maize plant was the subject of cultivation by the aborigines; and its culture dates from so remote a period that the wild plant from which it has been developed is with difficulty identified[1]. Nor was it the only cereal which might have been cultivated: for other indigenous grains, though of far less value, were found in various parts of the New World, and served as elements of natural subsistence[2]. So marked, however, was the superiority of maize, that the rest were for the most part neglected. Leguminous plants ranking almost with the cereals in value as food were common to both worlds[3], and in the New World as in the Old

[1] That the maize, as we now have it, is practically the creation of human labour and ingenuity is proved not only by the insignificant size of the euchlaena grasses, the cognate wild species, but by its rapid deterioration if allowed to become feral, the first stage of which is the familiar 'sod-corn' of the American farmer. The wild manioc (*Manihot pusilla*) of Brazil, according to Spix and Martius (Reise in Brasilien, Th. 3, p. 31), is a small and comparatively worthless plant.

[2] Indigenous wheat was found in Mechoacan, oats and rye in California, rice in North America, the Orinoco valley, and Brazil, and in Chile, according to Molina (Saggio sulla Storia Civile del Chili, Lib. I. cap. 3), a sort of rye (*magu*) and two sorts of barley (*guegen* and *tuca*).

[3] According to De Candolle, out of 3725 leguminous species, no less than 1190 belong to the New World.

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were the subject of artificial cultivation. With vegetable species capable of conversion into the best artificial basis of subsistence the New World may therefore be said to have been even more amply furnished than the Old. In the next best class of vegetable species, the roots, the superiority of the New World is even more clearly manifest; no roots of the Old World are comparable for a moment to the potato and the manioc as food-staples for temperate and tropical climates respectively. In the lowest class, that of fruit trees capable of rapid propagation and sufficient for subsistence [1], America was undoubtedly inferior. To compare with food-staples like the bread-fruit, the date-palm, the plantain and banana, and the pandanus, America has nothing except some species belonging to the palm group, indigenous to Guiana, New Granada and Brazil, and chiefly found in hot and unhealthy districts; and although some among them have been propagated artificially from a remote period, they are of inferior alimentary value, and never appear to have constituted a true basis of subsistence [2]. The cocoa-nut palm,

[1] The oak, the mainstay of the tribes of California, can only be propagated from seed; and as many years must elapse before it bears fruit, it is hardly to be wondered at that the savages who subsist on it should never have been sufficiently provident to plant it. The same may be said of the South American araucaria, which is still an important food-resource of the aborigines of Chile. The familiar minor fruits of temperate climes, though extensively cultivated from a remote date in both worlds, are devoid of importance as substantial sources of aliment. The cultivation of trees as an alimentary basis is practically confined to the tropics, and to fast-growing species which are propagated by suckers.

[2] A short account of the American palms, 'of less importance to man than those of the Old World, but surpassing them in beauty,' is given by Hartwig, Tropen-Welt, ch. 36. Man's kindliest foster-mothers, says Peschel, are found among the palms. Among the trees cultivated for nutriment by the natives of tropical South America is the *Gulielma speciosa*, which bears the apricot or egg-plum-shaped *pupunhas*. It must have been artificially propagated, by the transplantation of suckers, from very remote times, for its original hard kernel is either degenerated to a fibrous mass or completely absorbed in the fruit. The forests of the Amazon river resemble an unappropriated fruit garden, where the Brasilian chestnut (*Bertholletia excelsa*) ripens its almond-like seeds, the cacao, the pine-apple, the sapota (*Achras Sapota*) the avocado (*Persea gratissima*) and many other berried and plum and cherry-like fruits grow wild, while the Miriti or Moriche (*Mauritia flexuosa*) yields palm-wine as well as daily food (Völkerkunde, p. 159). The pine-apple and bread-fruit, Mr. Belt remarks (Naturalist in Nicaragua, p. 68), have also been cultivated from remote antiquity by cuttings or shoots and, like the Gulielma palm, have lost in a great

common to most of the tropical coasts of the globe, was found both on the Pacific and Atlantic shores, and flourished abundantly in the West Indian islands. It does not, however, appear to have been artificially propagated, and occupied no important place among aboriginal food resources. We are therefore unable to assign to arboriculture any definite place in the aboriginal advancement of America; and in order to illustrate the stage of advancement to which it belongs we must have recourse to the Old World.

Fruits in relation to advancement.

There is little doubt that in the Old World the culture of fruit-trees, notably of the fig and the date-palm, preceded that of roots and cereals as an alimentary resource; and a well-marked line separates the age of root and seed cultivation from an antecedent age in which man was mainly dependent for subsistence on hunting and fishing, and derived his chief vegetable supplies from the fruit-trees. What marks this period most distinctly is the sacred character which is still attributed to the principal fruit-trees throughout the tropical and sub-tropical districts of the Old World, from Western Africa to Java: a feature which, as might be anticipated, is wholly wanting in aboriginal America. Such trees early became the subject of artificial propagation: this had in fact, even in primitive times, been practised so long that the invention of the process was ascribed to the gods, in whom the knowledge of good and evil fruits was originally vested, and from whom man wrested it, as he is said to have wrested fire, by fraud or disobedience. Long after man had ceased to enjoy the questionable blessings of the terrestrial paradise, and had been compelled to resort for subsistence to agriculture and herdsmanship, he still dreamed of his primitive home, believing that the forest still held concealed, somewhere within its depths, the tree of life, a tree whose fruit would not only

measure the faculty of producing mature seed. 'Such varieties could not arise in a state of nature, but are due to selection by early races of mankind, who would naturally propagate the best varieties; and to do this seed was not required. As the finest varieties of bananas, pine-apples and bread-fruit are almost seedless, it is probable that the nutriment that would have been required for the formation of the seeds has been expended in producing larger and more succulent fruits.'

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support mortal existence, but would make the eater immortal, like the gods themselves. Lest man should discover it, the jealous gods, alarmed by his growing intelligence, had driven him forth, and had condemned him to the toil and uncertainty of agriculture. The familiar Biblical narrative in which this conception is embodied, perhaps the most valuable document of primitive history extant, furnishes us with a vivid picture of the fruit-eating savage. Naked, shameless and fearful, feeble in force, and languid in desire, largely dependent in the food-quest, which principally occupied him, on the industry of his female companion, incapable of self-control, because moral restraint was necessarily unknown to a creature whose only guide in life was the food-taboo, though the penalty for the breach of this was death, he grovelled in superstition, heard the voice of the dreaded gods in every wind, and attributed to the sleek, well-nourished, and fatally-armed serpent, a higher degree of intelligence than he possessed himself[1]. A counterpart of this striking picture of the denizen of paradise was quite recently to be found among the savages of the Pacific Islands, where the bread fruit, the cocoa-nut palm, and the pandanus, formed the earliest basis of subsistence[2]; and something even more nearly approaching it may be still found among the fishing tribes who inhabit the delta of the Niger, where all agriculture, even that of the yam, is strictly forbidden by religion, and the only vegetable food found in

[1] Genesis ch. ii, iii.

[2] By way of illustration the following is quoted from Max Radiguet's interesting account of the Marquesas islanders. 'The god Oneui created the birds, grass, and trees. Many of the latter were in *avaiki* (the underworld); Pukuhakaha descended thither, and put a hook in the bread-fruit tree; then he ascended, dragging the tree with him to the surface, and pulling it out by the root. Opimea planted the first bread-fruit tree in Atitoka Bay. Tamahua, another god, guarded the cocoa-nut palm in *avaiki*. Mataia, wishing to procure it, made himself the *ikoa* (an adoptive relationship marked by exchange of name), of Tamahua, and gave him his daughter as a companion (cp: Gen. vi. 2); Tamahua then came to dwell in Taiohae Bay, where he planted this tree. Temoana, chief of the Teis, claimed descent from this god' (Les Derniers Sauvages, p. 229). The food-taboo was often temporarily imposed to prevent dearth; it was declared when the produce of any species became scarce, and lasted for six months. The bread fruit-tree in M. Radiguet's time (1842–1859) was tabooed in certain valleys.

use is the cocoa-nut[1]. Why simple arboriculture contributes nothing directly to advancement is obvious. It is a mere extension of the savage basis of life, and produces no new conditions whatever. It may enable a larger population to subsist on a given area; but it can have no further effect, except so far as it may familiarise man with the idea of artificially extending his means of subsistence, and lead him, as in general it appears ultimately to do, to cultivate roots or cereals. It is significant of the general advance in regard to artificial food-production which had taken place throughout the warmer latitudes of the New World, that in the districts where the fruits occupied the most important place, agriculture was either extremely difficult, owing to the luxuriance of the forest, or quite impracticable, as in the case of the islands forming the delta of the Orinoco, which are covered by deep floods during a great part of the year. Fruit-trees, especially the Mauritia palm, are here the sole source of vegetable food[2]: and, like the Gulielma speciosa and the Assai palm, which furnish fruit-subsistence continuously during most of the year in the hot lowlands of the Amazon and its tributaries, the Mauritia forms an important food-resource on the Atlantic coast further southward, between the Orinoco and the Essequibo rivers[3]. But throughout the district of the palms, wherever agriculture is practicable, the aborigines have for the most part learned to supplement the fruit supply by cultivating to some variable

[1] Hutchinson, Ten Years among the Ethiopians, p. 83.

[2] Gumilla (Orinoco Ilustrado, vol. i, pp. 143–154, ed. 1791) gives a full account of the Guaraunos, the principal nation of the Orinoco delta, whom he considers the most expert fishermen of the whole district, and describes their ingenuity in turning the Mauritia palm to many uses. Its timber served for the construction of their pile villages, and for boat-building, and from the fibres of the leaf they manufactured clothing, fishing-nets, and sleeping hammocks. From the sap they made a fermented drink, and besides the fruit derived a supply of food from the pith of the old trees.

[3] Besides the principal palm district, which includes the valleys of the Amazon and Orinoco, and the neighbouring Atlantic coasts, many species of palms having eatable fruits are found throughout the tropical forests of South America, especially on the lower slopes of the Andes in their whole extent from Venezuela to Bolivia, and in the Pacific forest district of New Granada. Artificial propagation, however, is limited to the districts mentioned in the text.

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extent the great root and cereal staples of the New World, maize and manioc[1].

Cultivation of roots prior to that of cereals.

It scarcely admits of doubt, though the materials for verifying the conclusion are but scanty, that in general the cultivation of food-roots has preceded and served as an introduction to that of cereals. The number of species the roots of which can be employed as food, the wide extent of their distribution, and the higher alimentary value and greater importance of roots as food-resources in the savage life, when compared with the seeds of cereal grasses in their rudimentary or natural stage, all indicate roots as the earliest objects of tillage: and these indications are confirmed by the circumstance that while wild culmiferous grasses prefer marshy situations, the principal cultivated food-roots appear to be for the most part natives of some comparatively dry and friable soil. As the mere disturbance of light soils in the search for roots has in itself the character of tillage, their artificial production may be said to be suggested by the process of collecting them in the wild state. The gathering of wild grass-seeds, usually effected by beating or shaking the ripened grain into a basket, while the plant remains rooted in the marshy soil, gives no hint of the method of their artificial production. The act of planting a root, on the contrary, as has been well observed, scarcely differs from that of digging one up; and the familiar 'woman-stick' of digger tribes, a simple pointed and fire-hardened stake, is also the general implement of primitive agriculture[2]. So easy is the transition, that the manioc, the most valuable among the roots, is even

[1] According to Gumilla, besides the Guaraunos, only two other tribes of the Orinoco district were entirely ignorant of agriculture. The Guaraunos, who, according to Raleigh (Discovery of Guiana), carried their canoes, in building which they were remarkably expert, to Trinidad and Guiana for sale, strictly abstained from eating agricultural produce even outside the limits of their own country.

[2] 'Considering how nearly planting a root is the same work as digging one up, it is likely that a tribe beginning to till the soil, would use their root-digging sticks for the new purpose; indeed a pointed stake has been found as the rude husbandman's implement, both in the Old and the New World.' Tylor, Anthropology, p. 216. The root-digging stick is in California the symbol of the duties of female life, as the bow is of those of the male life (Powers, Tribes of California, p. 133).

yet in rich soils cultivated by merely dropping a piece of the stalk into the hole from which the mature root has been extracted; one digging operation thus suffices for gathering the old crop and planting a new one[1]. In the case of many of the alimentary roots, a single tuber, where several are produced by one plant, or a fragment of the old one where only one exists, suffices to ensure a renewal of the supply, although the degeneration of successive crops in consequence of exhaustion of the soil speedily suggests the transfer of the process of reproduction to virgin earth: a change most directly indicated in the case of perennial plants such as the Brazilian arrow-root, which continues to produce fresh tubers, though of diminishing value, during several years, and the sweet potato. In the case of the last named root, which in virtue of its productiveness and wide distribution, takes the second rank among the tropical food-roots of the New World, the method of reproduction is suggested by nature with remarkable clearness. At the joints of the numerous trailing stalks which it sends forth in all directions, fresh roots are produced by simple contact with the soil, forty or fifty new centres of growth being often produced from a single plant. Even if the plant is left on the ground when the root has been taken, new tubers grow from its joints after the first shower of rain; and the method of laying down the shoots, by which the plant is usually cultivated, thus appears to be an imitation of nature of the simplest kind. When it is added that roots require little or no attention between the planting and the digging of the crop, it is obvious that their cultivation is perfectly consistent with the wandering habits of savage life; and the manioc and other roots are still in fact largely cultivated by tribes in Guiana and Brazil, who remain substantially in the savage

[1] From Gumilla (Orinoco Ilustrado, vol. ii. p. 242) it is clear that this primitive practice survived in his time among the Arawaks of Guiana. 'En el mismo sitio entierran tres o quatro pedazos del mismo palo, los quales a los quatro dias ya estan con sus retoños: y veis aqui otra mata de yuca, en lugar de la que se arrancó.' So, even yet, among the African tribes: 'When a woman takes up the roots, she thrusts a piece of the upper stalks into the hole she has made, draws back the soil, and a new crop is thereby begun.' Livingstone, Missionary Travels and Researches, chap. xvii.

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state. After digging and consuming the crop, and making provision for a new one, they quit the district for several months, seeking other supplies, and do not return to the clearing until the new supply of roots is ready for use.

The Potato.

The transition from natural to artificial production is equally simple in the case of the common potato, the principal vegetable staple of the colder temperate districts of South America. The potato is indigenous to the coast of Peru and Chile, including the slopes of the Cordillera de la Costa, almost as far south as the Strait of Magellan, and in Chile the thick natural beds in which it is found, wherever the growth of the forest admits of their formation, have always been a source of subsistence to the wandering aborigines. A slight examination suffices to show that each tuber contains the germ of several new plants: and its reproduction is so easy, that the hunter tribes of Chile are reported to have cultivated from time immemorial, in the vicinity of their villages, more than thirty varieties[1]. The culture of the potato appears to have been carried from the coast into the elevated interior districts where it was not indigenous, by the hunters of the huanaco and vicuña, and in this way to have been extended, at a very early period, to the whole cordillera of the Andes. In the basin of Lake Titicaca its cultivation was most widely practised, owing to the increase of settled population consequent on the domestication of the llama; and here it remained unaffected by the spread of maize cultivation, for maize, though reaching its highest perfection in the warmer valleys of the surrounding districts, does not ripen at so great an altitude as that of the Collao.

Roots superseded by cereals.

To these indications of the priority of root-culture it remains to be added that, in the hotter climates of both hemispheres, wherever both classes are the subject of cultivation, cereals and legumens are usually found to be superseding roots as the substantial basis of aliment in proportion to the degree of advancement which has been reached. In India, the most advanced of tropical countries, the indigenous yam has long been completely superseded

[1] Molina, Storia del Chili, L. ii. cap. 10.

by the cereals. In tropical Africa, where the yam is traditionally regarded as the primitive food of man, and the earliest object of agriculture[1], the dourra and other small-grained native cereals, owing to the greater amount of labour which their cultivation requires, scarcely compete with it as the substantial food-resource, and since the introduction from America of the mahioc and maize, the former is for the same reason usually preferred. The substitution of maize for roots was in progress at the Discovery throughout intertropical America. In Mexico, though many roots were cultivated, among them the sweet potato and sweet manioc, the universal staff of life was maize: and in Peru maize had been substituted for the potato to the extreme limit within which it will ripen its seeds. Among the tribes of the Plate River, who were probably the first of the South American tribes to reduce it to cultivation, maize was the principal resource, though traces of a primitive root-culture survived. In Brazil maize was gradually invading the Atlantic coast, to which the manioc is indigenous, and where its cultivation had been widely spread: and the substitution of the one for the other is to this day regarded as a mark of progress, and urged as an object of public policy[2]. In the West Indian islands, the manioc, aje, and sweet potato were the chief food-staples: maize, which had apparently been recently introduced, was cultivated only to a limited extent, and was not in general employed for bread-making. Bread made from roots was the principal vegetable food of the Indians of Florida, though the cultivation of maize had been introduced[3]. Only in the northern temperate zone, the boundary in the New World being the limit of the sweet potato in Maryland, do we find cereal agriculture making its way among tribes who mainly subsisted on animal-food without the culture of roots to introduce it, the obvious explanation being that unlike the south temperate zone in

[1] R. F. Burton, Abeokuta, vol. i., p. 321. 'Fruits,' says the writer, 'being despised, are cheap;' while 'Guinea corn sells at fancy prices.'

[2] Comte de la Hure, L'Empire du Brésil, p. 211; Van Lede, Colonisation au Brésil, p. 138.

[3] Ternaux-Compans, Recueil de Pièces sur la Floride, pp. 14, 21.

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America, the north temperate zone possessed no root capable of forming a basis of subsistence[1].

Advanced root-culture. Desiccation.

The transition from primitive root-culture to the stage of advancement in which roots become a true basis of subsistence, as in the case of the manioc in Brazil, and the common potato in the Peruvian sierra, could only be effected by the discovery of appropriate methods of preparing them for storage. The chief obstacle to the conversion of roots into an alimentary basis is their more or less speedy decomposition when exposed to the atmosphere. The primitive way of obviating decay was to cut them in pieces and dry them in the sun, a method still occasionally practised in the case of the sweet potato; but a more effectual one, in the case of the tropical roots, is to reduce them to a pulp, press out the juice, and expose the residue to heat, upon which it assumes the form of meal, and can be stored for an indefinite period. This method had at the time of the Discovery long been applied to the manioc, and, what is one of the most curious facts in aboriginal history, it had been transferred, whether by accident or experiment, to the bitter varieties of the plant, which in their natural state are poisonous. The result had been that throughout eastern tropical America, these bitter varieties of the manioc had practically superseded the sweet variety as a basis of subsistence, though the latter remained in cultivation as a vegetable. This substitution of the poisonous for the sweet manioc appears to be due to the fact that while both are slow of growth in comparison with cereals, the bitter variety is richer in farina, and is reproduced much more rapidly than the sweet one[2]. Baked in large cakes, and thoroughly dried by exposure to the sun, manioc meal assumes the form of a hard biscuit which can be stored for two or even three years, being

[1] Obscure as is the history of early agriculture in the Old World, indications are not wanting that the culture of roots for food once possessed an importance which had disappeared early in historical times; and the old ethnologists even agree in considering the presence of indigenous food-roots as among the causes of early advancement in Egypt and Babylonia. See Pliny, Nat. Hist. lib. XVIII, c. 13: Diodorus, lib. 1. c. 43: Berosus, ed. Richter, p. 48.

[2] Labat, Nouveau Voyage, ed. 1742, vol. i. p. 411.

broken and soaked in water when required for use. In the Peruvian sierra, the two food-roots, the common potato and the oca, were prepared for storage by a process of desiccation scarcely less ingenious, on the principle of exposure to cold instead of heat. After being steeped in water, they are exposed to frost until frozen through. The moisture is then pressed out, and the root, greatly reduced in size, is exposed to the air until thoroughly dried, in which condition it can be stored for an indefinite period, and easily transported from place to place[1].

Instance of a root-cultivating population —Hayti.

Before passing from the food-roots of the New World to its great cereal staple, maize, the universal basis of advancement in the intertropical mountain districts, it will be useful to form an estimate of the social condition of some district where roots constituted the main basis of subsistence. Widely, however, as the manioc and the common potato were disseminated, in no part of the continent is either found to have been the fundamental alimentary basis. Nowhere throughout the vast district, from Chile to New Granada, where the potato was cultivated, did it occupy any other than a secondary place. The tribes of Chile remained in the hunter stage, and largely relied for farinaceous food on the pine-nut: in the Bolivian plateau and the Titicaca basin the character assumed by advancement had been determined by the domestication of the llama; while northward of Titicaca, except at great elevations, maize had superseded the potato as the main object of agriculture. Nor do we find that on the northern and north-eastern shores of the South American continent, where the manioc was so important a vegetable resource, it had become the substantial basis of subsistence. Almost everywhere densely forested, abounding in game and fish, better furnished with natural fruit-supplies than any other part of the New World, and affording unlimited space for the savage wandering life, these coasts, among their numerous manioc-growing tribes, afforded no instance of a people to whom agriculture was the main business of life, or with whom

[1] The *chuño*, or frozen potato, is still the universal vegetable food of the colder tracts of the South American sierra.

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arts, government or religion had advanced a step beyond savagery. But the physical conditions which thus obstructed the development of agriculture on the continent were wanting in the West Indian islands, and among these, the large island of Hayti even directly invited its extension. Its broad savannahs, unencumbered with forests, its comparatively mild and equable climate, and the absence of the larger game, indicated the cultivation of the soil, next to fishing, as the natural occupation of its inhabitants: and at the time of the discovery, agriculture had been long and successfully pursued, and had produced an unusually large population. Hayti was generally thought, at the time of the discovery, to contain above a million of inhabitants; and from the fact that, in 1508, when the number had beyond doubt been largely reduced, there were still 60,000 males left, it may be inferred that though this estimate may have exceeded the truth, the island was more densely peopled than any part of the continent. Fish and small game, its natural alimentary resources, could have supported but a small fraction of such a number; maize-culture, though not unknown, was not widely extended; and contemporary evidence proves that the enormous manioc-plantations which were found in almost every part of the island, were the main alimentary resource of its inhabitants. Nowhere in the world is the task of the cultivator easier. In order to convert any part of the great savannahs of Hayti into a *conuco*, or manioc-field, it was only necessary to set fire, at the proper season, to the dry prairie grass, to throw up the soil with the fire-hardened stick in mounds a yard in diameter and a few feet apart, to plant in each a few cuttings of the manioc stem, and to weed the field once or twice during the earlier months; the rest was the work of nature. In four months, the *conuco*, covered with dark green plants, resembled the vineyards of Spain; in twelve, a heavy crop of roots was ready for conversion into bread. If we may accept the estimate of Las Casas[1], the labour of twenty women, working six hours a day for a month, sufficed, on this fertile soil, to provide bread enough to last

Manioc cultivation in Hayti.

[1] Apologetica Historia, ch. xi.

three hundred persons for two years. We know as a fact that the size of the plantations, the rows of which were counted by the thousand, was enormous; and the offer of a cacique, who proposed, as an alternative to the tribute of gold, which his people were unable to yield, to plant a manioc-field across the island from Isabella in the north to Santo Domingo in the south [1], but slightly exaggerated the ease with which these immense plantations were formed. In such circumstances, Hayti might have supported a larger population than its estimated million: and the mass of the islanders, including the males generally, who took no share in the labour of agriculture and bread-making, being liberated from the task of providing the daily meal, we might expect to find some signs of social progress, such as are abundantly found in the intertropical mountain districts.

Social condition of Hayti.

Although in the course of two generations the aborigines of Hayti entirely disappeared, the observations of the colonists who thus early displaced them clearly show that the degree of advancement which they had attained was low indeed. In the useful arts they exhibited no improvement upon most savage tribes. The only metal worked by them being gold, though copper and tin were found in the island, they used cutting implements of stone, and bone fishing-hooks: the sole instrument of agriculture was the fire-hardened stake. That clothing was little used may be due chiefly to the mildness of the climate; and although wild cotton was manufactured into cloths and hammocks, the cotton shrub was not artificially cultivated. Their huts were of the simplest form, though large joint-family houses, such as are met with in almost all the temperate climates of the New World, were occasionally built; but stone architecture and the simplest forms of fortification were alike unknown, and the chiefs, without exception, lived in the midst of and shared the daily life and fare of the tribe. There appears to have been no permanent conversion of the land to tillage, a fresh portion of the savannah being burned for each successive plantation. The association of

[1] Las Casas, Brevissima Relacion.

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tribes for military purposes existed to a greater extent than among the corresponding tribes on the continent, for the island contained five districts, each furnishing several thousand warriors under an independent war-chief; but the chieftainship of these cantons had degenerated into an hereditary dignity, and in one out of the five had been allowed to descend to a woman. The equipment and fighting power of the warriors, while sufficing for the settlement of quarrels over the boundaries of manioc-grounds and fisheries, were rather below than above the general level of the forest tribes; a fact which is explained when it is considered that among low races the hunting of the larger game, which were wanting in Hayti, is the most effective school of war, and that fish and manioc-bread, though adequate as food for peaceful peoples, will not maintain a degree of physical energy sufficient to enable them to hold their ground against hunter assailants. In war the Haytians, except when in overwhelming numbers, were completely at the mercy of the Caribs; and no numerical superiority enabled them to stand for a moment against Europeans. Lastly, the physique of the people, never very robust, appears to have declined, and endemic disease had firmly established itself. Such facts seem to point to the conclusion that in Hayti the predominant culture of the manioc, as the main base of life, instead of leading to continuous advancement, had led to the positive degeneration, and prepared the way for the total extinction, of the population.

Haytian religion.

"One of the most important tests of the advancement of a population is its religion. That of Hayti was simple fetishism, combined with ancestor-worship: the religion, that is, of the lowest peoples known. A numerous class of wizards or shamans, including both males and females, were considered to have power over the multitude of spirits who shared the world with man, to be able to embody them in the form of idols, usually, but not always, in human shape, and made of wood, stone, clay, or stuffed cotton, to understand their language, and to influence their will. The second class of idols consisted of the wooden figures of deceased chiefs, erected at their burial places: and the most

famous were the figures of the two first ancestors of mankind, preserved in the very cave from which they were reported to have issued at the abatement of the deluge. All were served with a ceremonious worship, in which rude hymns were chanted, and manioc-bread was offered in sacrifice, to be afterwards distributed among the worshippers: and to some there was assigned a separate manioc-plantation, from the produce of which its sacrificial bread was made. The gods of the different tribes were held in greater or less esteem, according to the good or evil fortune which attended their owners: and war was occasionally made for the possession of the idols of a prosperous village. Hence it sometimes happened that they were taken to the mountains for concealment. Sometimes they were reported to have quitted the tribe, in consequence of some omission in their ritual, and to guard against this they were secured in the houses built for them by cotton ropes. To destroy the gods of the enemy was the most effectual form of defeat. One famous idol had been rendered shapeless by the burning of its house, until its features and limbs were miraculously restored by washing it in manioc-juice: after which the manioc-root, previously much smaller, was believed to have been increased to its normal size. These rude religious ideas of an extinct people remind us forcibly of the lowest religion of Peru, that of the *huacas*, which the later Apu-Ccapac-Incas laboured to extirpate [1].

Labour involved in the culture of vegetable species.

So far as concerns the New World, the above facts tend to support the general proposition, to which the history of advancement in the Old World suggests no exception, that nothing worthy the name of civilisation has ever been founded on any other agricultural basis than the cereals. This appears to be largely due to the fact that the seeds of the cereal grasses are, as compared with fruits and roots, extremely rich in albumen and albuminoids, the great nourishers of the muscular and nervous systems. Regarded as stimulants to human activity, fruits and roots have a low comparative value. Corn, in this regard, is

[1] Las Casas, Apologetica Historia, chaps. 120, 166; Gomara, Hist. de Las Indias, ch. 28.

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nearly equal to the flesh of animals. But the most important reason for the superiority of cereal agriculture as a basis of social advancement only becomes apparent when the nature of its methods is considered. Cereal agriculture, alone among the forms of food-production, taxes, recompenses and stimulates labour and ingenuity in an equal degree. Populations which depend on arboriculture never learn even the rudiments of the labour-lesson which is the beginning of the education of humanity. Root-cultivating populations learn only the bare rudiments: for roots demand far less labour than is necessary to keep man in anything approaching to continuous employment. It is the peculiar quality of cereal agriculture that by occupying man regularly during a considerable part of the year it directly tends to render the unit of human labour a constant quantity, and to give it new forms of employment. The labour which in its simplest form the culture of cereals involves is in itself of a varied character; and it naturally suggests further transformations of labour, the effect of which is to further develop not only the capacities of the soil, but the industry and ingenuity of the cultivator. When the unit of labour has once been rendered a constant quantity, the material of civilisation has been provided.

Cereal agriculture in the New World—Maize.

Although America possessed a few small culmiferous grasses, analogous to the wild forms of the rice, wheat, barley, oats, and rye of the Old World, these were cultivated, if at all, to a very small extent[1]: while a large and extremely productive corn, resembling none of the cereals of the Old World, was cultivated so extensively as to afford at least partial subsistence to the great majority of the American aborigines. Whether, if the wild form of maize had not existed, cereal agriculture would have had any place whatever in aboriginal American advancement is extremely doubtful. The smaller cereals cannot be profitably grown without some means of reducing the entire surface of the

[1] The *huautli* or wheat of Mechoacan was brought in considerable quantities to Mexico as a tribute; and it appears to have been to some extent cultivated there as a resource when the maize crop was deficient (Brasseur de Bourbourg, Hist. des Nations Civilisées, vol. i. p. 27).

seed-plot to a state of tilth: a process which involves great labour, and can only be pursued on an adequate scale by the aid of the plough and of the large labouring animals. A narrow wooden or bronze spade was the most advanced agricultural implement of the New World: and, in the absence of the ox and horse, the tillage of the soil had to be universally accomplished by the unassisted labour of man. In such circumstances, the wide prevalence of maize-agriculture suggests that this cereal must be especially suitable for cultivation by slightly advanced populations: a suggestion which is at once confirmed by an examination of its nature. The chief characteristic of maize, when compared with other cereals, is the extraordinary size both of the plant and of its grain. The principal varieties range from six to twelve feet in height; in some fertile soils it reaches a height of sixteen or eighteen feet[1]. Each plant produces from two to five ears; the ear, varying from six to ten inches long, contains from twelve to sixteen rows of closely-set grains; and the grain is larger than that of any other cereal known. This gigantic size directly facilitates its cultivation by limiting the number of plants that can come to maturity in a given space; while smaller cereals require the laborious tillage of the entire surface of the field, maize can be successfully cultivated without this process, and by means of the fire-hardened stake alone. All that is necessary is to burn the trees and wild plants on the surface of the plot, to make holes at proper distances, to drop in the seed, to stir the earth round the young plant, and to keep it clear of weeds, and in from two to four months' time, according to the quality of the soil and the degrees of rain and sunshine, the seed yields from one to four hundredfold. Two crops can be grown in a year on the same plot: and in some places three and even four successive crops are taken. While the ease with which this unrivalled corn is produced placed cereal agriculture within the reach of man at a comparatively early stage of advancement, the large returns which it

[1] The average height of a crop planted by Mr. A. J. Waddell, of Ensenada, Lower California, in 1887.

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yielded greatly stimulated its cultivation; and at the time of the Discovery it had already spread over most of tropical and temperate America, where no animal capable of agricultural labour existed, and in many parts of which the idea of reducing the soil to tilth was wholly unknown. Thus did nature to some extent compensate America for the want of the great domestic animals by endowing it with an unique cereal, the largest and most productive known, and capable of being profitably cultivated without them.

Origin of maize-cultivation—Mexico and Central America.

The two bases, then, of advancement in America were the domestication of the auchenias, limited to the Andes, and maize-agriculture, which was not only common to the three areas of aboriginal conquest, but was extensively pursued far outside their limits, both in the Southern and the Northern continents. We have seen that the herdsmen of the Andes, through the domestication of indigenous animals, became the founders of the great dominion of Peru: we now find that cultivators of an indigenous corn founded the advanced communities of Mexico and Central America. For the recent researches of naturalists have proved that maize is indigenous to the Pacific district intervening between the head of the Californian gulf and the isthmus of Panama, the very district in which its cultivation was most extensively practised, and where local traditions indicated it as the primitive food of man[1]. Of the two wild American grasses which have been identified with maize, the Euchlaena Mexicana, and the Euchlaena luxurians or *teosynte* of Guatemala, the latter approximates most nearly to the cultivated corn: and it is consistent with this fact that the Central American maize, at the time of the Discovery, was reputed to be larger and more productive than the Mexican, and that Central America, and not Mexico, appears in tradition as the earliest seat of maize cultivation. The Maya tribes unanimously ascribed the general use of maize to their culture-hero Gucumatz, who after a long journey, the object of which was the

[1] Ascherson, in Sitzungs-berichten der Gesellschaft Naturforschenden Freunde in Berlin, 1876, p. 160: L. Wittmack, in Berlin Zeitschrift für Ethnologie, vol. xii. (1880), p. 85.

discovery of some alimentary plant more substantial than the fruits and roots on which they formerly subsisted, reached the district of Paxil-Cayala, where the people were found harvesting ripe maize[1]. The Mexicans, who adopted this tradition, called the place Tonaca-tepetl (mountain of subsistence). According to another Maya tradition, after man had been created of earth, it was by means of maize that he was converted into a being of flesh and blood: and maize was the food of Nata, the Noah of Mexico, in the hollowed cypress in which he weathered the deluge[2].

Other centres of maize-agriculture probable.

Although the most advanced district of America thus proves to be the home of the only known wild grasses which are nearly allied to the cultivated maize, it by no means follows that its general cultivation throughout the continent is due to extension from this single district as a centre. The discovery of two distinct wild forms of the Euchlaena in itself renders probable the existence of others in other districts: while, from the great diversity of the cultivated maizes and the wide area of their distribution, it appears likely that several wild species either extinct or not hitherto found, have in different places been independently reduced to cultivation. This view is confirmed by the fact that other small grasses, which can be recognised as akin to maize, though in a remoter degree than the Euchlaena, are found in various parts of the New World[3]. If we may judge from specimens which are found in ancient interments, the diversity exhibited by the varieties of maize in the shape, colour, and number of the grain, already existed in an equally marked degree in very remote times: and further support may be thought to be lent to the view that maize-cultivation originated at several independent centres by the fact that the corn bears a different name in each of the principal American languages. Since the discovery of the Euchlaena grasses, and their identification with maize, it is

[1] Paxil-Cayala (place where the falling waters divide) is placed by Brasseur de Bourbourg in Chiapas.

[2] Brasseur de Bourbourg, Hist. des Nations Civilisées du Mexique et de L'Amérique Centrale, vol. 1. pp. 57–61, 115, 426, 428.

[3] Ascherson, *ubi sup.*

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at any rate impossible to regard either the tunicated maize of Paraguay, the stunted maize of the San Juan valley in Colorado, or the blue maize of the Pueblo Indians, as the primitive form of the corn; but it should be observed that the homes of the two last-mentioned varieties, to which that rank has been assigned by some authorities[1], border on the district to which the Euchlaena grasses are indigenous.

Obstacles to maize-cultivation.

The primitive history of Mexico affords some interesting glimpses of the obstacles which beset maize-cultivation in its early stages. According to the traditions of the Toltecs, who practised agriculture in Mexico long before the arrival of the Aztecs, their reliance upon maize-cultivation involved them in difficulties which for a long time caused it to be altogether abandoned. Their stores of corn were plundered by the Chichimecs, the hunter tribes of the neighbouring mountains; intense and continuous droughts caused the plants to wither; the loss of their stores, and the failure of their crops, destroyed the population; and the survivors, disheartened and diminished in numbers, ceased to till their soil, and recurred for subsistence to natural resources. In after years, a chief of Quauhtepec, who possessed a few grains of maize, which were preserved as a relic, sowed them by way of experiment: and the result was so successful that agriculture was not only revived among the Toltecs, but spread to the Aculhuas, and ultimately among the Chichimecs themselves. Later in Mexican history, in the time of the first Montezuma, a prolonged dearth occurred of which a more precise account has been preserved. Severe frosts cut off the whole crop while the ear was green; and not a grain of maize was harvested. During this year the Mexicans subsisted on their stores; but the same calamity happened in the year which followed, and in the next following year the crop was destroyed by an intense drought. A famine ensued, as a consequence of which the people bartered their children into slavery for food; and the mass of the population were driven to subsist upon the roots of the lake-reed, which, according to

[1] To the San Juan maize, by Mr. Bandelier: to that of the Pueblo Indians, by Dr. Edward Palmer.

tradition, had been the food of the first inhabitants, as the roots of the *totora* were once the food of the aborigines of Lake Titicaca. Many families quitted Mexico, some of whom went no farther than the lowlands of Totonacapan, on the Atlantic, while others never returned, but settled permanently in distant regions. In the year which followed, neither maize, *huauhtli*, nor pulse were sown. Rain fell this year in abundance; and strange to tell, the neglected fields produced spontaneous crops, which encouraged the cultivators to resume their intermitted labours. Occurrences such as these, while they apparently obstructed the development of agriculture, must in the end have contributed to promote it, by compelling the cultivator to increase his stores, to fix with greater certainty, by astronomical observations, the proper time for sowing, and to provide against drought by the method of irrigation [1].

Maize in South America—Paraguay and Southern Peru.

It is easy to understand how from Mexico the cultivation of maize may have spread to the valley of the Mississippi and to the Atlantic coast: and the fact that the agriculture of these districts was mainly concerned with the products of Mexican field-labour, maize, beans, and pumpkins, lends countenance to the view that the aboriginal agriculture of North America generally was in fact of Mexican origin [2]. From Central America the cultivation of maize might similarly have been extended south of the isthmus of Panama: but the fact that in South America we find a very large district in which maize agriculture was extensively practised from remote antiquity, and from thence appears to have been carried eastward, westward, and northward, by tribes who were driven to migrate by the increase of population, renders it not improbable that the cultivation of maize had an independent origin in the Southern continent [3]. This district is

[1] Torquemada, Monarquia Indiana, vol. i. pp. 67, 158, 159.

[2] Gallatin, Trans. of American Ethnological Society, vol. i. p. 209; vol. ii. p. xlix.

[3] The Tupi-Guarani tribes, according to Azara, all over the extensive area which they occupied, cultivated maize as their principal food. In Paraguay they cultivated several species having different forms of grain, besides a great variety in colour. Voyages dans L'Amérique Méridionale, vol. i. p. 146.

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the basin of the Plate River and its tributaries. The Jesuit missionaries, following aboriginal tradition, always considered this to be the original seat of maize-agriculture, and the tunicated maize of Paraguay to be the original form of the corn. The Guaranis, as the maize-growing tribes of Paraguay were called by the Jesuits, were identical with the great maize-growing people calling themselves the Tupi, who migrated northward and eastward to the coast of Brazil: and there can be no doubt that the tribes who occupied the valleys which approached the plateau of Bolivia also originated in the Plate River valley. From these last-named tribes the herdsmen of the Collao may have derived their first supplies of maize, the ear of which will not ripen in their own elevated district: and for the purpose of growing larger supplies they founded colonies in the valleys of the Cordillera to the westward on the Pacific coast. Ultimately they sent forth other offshoots in the valleys of the Andes to the eastward and northward. One of the last-mentioned colonies, founded in the valley of Cuzco, a district which produces the finest variety of maize yet known[1], became the centre of the dominion of the Incas. Though the question whether maize-agriculture did or did not independently originate in the South American continent is still doubtful, it is certain that Paraguay was a centre from which maize-growing tribes extended it in all directions, and highly probable that the maize-culture of the Inca dominion had Paraguay for its place of origin.

Cañari legend of the origin of maize-cultivation.

It is consistent with this view that the traditions of the Incas, as far as they are known to us, give no account of the actual origin of maize-agriculture; for Manco-Ccapac is represented as a wandering husbandman, familiar with his art, and equipped with a staff by which he gauged the depth of the soil. But far to the northward of Cuzco, in a district conquered by the latest Apu-Ccapac-Incas, agriculture was considered to be of local origin. Among

Another cereal grass, a species of wild rice, is indigenous to the lagoons and inundated flats in the north of Paraguay (Id. p. 100).

[1] The white maize of Yucay. The Guaranis, according to Azara, had a white maize (*abatý-tý*), but it did not rank as their best species.

the Cañari Indians, in the district southward of Quito, a mountain called Huacap-ñan (path of the *huaca*) was venerated as the original seat of maize-cultivation: and a deluge-myth, which was current among them after the conquest, clearly indicates that they knew that the seeds of maize, like those of all other cereals, were the food of birds, by whom they were carried from place to place, long before they became the principal resource of man, and that it was from the birds, with whose habits savage man very early becomes familiar, that he first learned their alimentary value. At the time of the great deluge, according to the Cañaris, only two brothers of their nation escaped to the heights of Huacap-ñan, where they remained until the flood had subsided. Their provisions being then exhausted, they descended to the lower tracts in quest of food. The herbs and roots which they were able to collect scarcely sufficed for their sustenance, and hunger sorely pressed them, until two parrots entered their hut in their absence and prepared them a meal of cooked maize, together with a supply of the fermented liquor (chicha), which is made by steeping it in water. This happened day by day, until at length one of the birds was made captive by the brothers. When thus captured, it changed to a beautiful woman, from whom the brothers obtained the maize seed and learned the art of cultivating it, and who ultimately became the ancestress of the Cañari nation. Hence the religious veneration with which the Huacap-ñan was regarded as the place where maize was first sown: hence, also, the parrot was looked on by the Cañaris as a sacred bird, its plumage being worn in the tribal festivals[1]. There is, no doubt, risk in assigning any rational meaning to many of the aboriginal myths: but the one here in question is remarkable as embodying a view of the origin of the use and cultivation of maize, which in part we know to be absolutely correct: for the cultivation of maize, like its preparation for food and fermented drink, was in the earliest times the exclusive task of the women of the tribe. It is only in a later stage that it is shared by the men.

[1] Molina, ap. Markham, Rites and Laws of the Incas, p. 8.

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If it were possible to attach much weight to language as evidence in ethnology, the circumstance that in the language of the Muyscas of New Granada, maize was known by its Guarani name (*aba*) would indicate that its cultivation here was also derived from tribes who had emigrated northwards from Paraguay and found a suitable district for agriculture on the far distant and isolated plateau of Bogota. Looking, however, to the simple elements of which the word is composed, it is possible that this coincidence of names is a mere accident. Apart from this, the probabilities as to the derivation of maize-agriculture in the coast valleys in the north of Peru and on the plateau of Bogota, whether from Central America in the north or from Paraguay and the cordillera of Peru in the south are, notwithstanding the closer proximity of the former district, in favour of the latter. We know as a fact that the maize-cultivating colonies in the south coast valleys of Peru, in the district of Tacna and Arica, were planted by the herdsmen of the Collao. The fact that in the coast valleys to the north, maize-agriculture existed long before their conquest by the Incas, cannot be said to be inconsistent with the hypothesis that it was derived from the Cordillera: while cotton, the clothing staple of the coast valleys, may have been derived either from Paraguay, by way of the Cordillera, or from Central America, in both of which districts it was indigenous. Maize-agriculture was common to all the coasts of the Caribbean sea: but in the islands it was practised to a far less extent than in Mexico, and by tribes whom we know to have emigrated northwards from the district of the delta of the Orinoco. The maize-growing aborigines of Venezuela, from their ethnological affinities, appear to belong also to the same stock: and, even supposing the cultivation of maize to have found its way to the plateau of Bogota by way of the Magdalena river, and not from the valleys to the eastward, it is obviously possible that it may have been of strictly South American origin, and be unconnected with the great northern centre of maize-cultivation in Central America and Mexico. On the whole, looking to the fact that the isthmus of Panama has always been a barrier rather

than a means of inter-communication, that the northern valleys of Peru can only be reached from the Central American coast by a long and difficult navigation, and that the maize-agriculture of the northern shore of South America is beyond reasonable doubt of strictly South American origin, being connected with the great centre in Paraguay by the maize-growing Carib, Arawak, and Tupi tribes of the Atlantic coast, it seems most reasonable to include all the maize-growing districts of South America, without exception, in a single group, and to fix the centre of origination in the district of Paraguay.

Centres of artificial food-production in America.

From the preceding survey of the alimentary resources of the New World it appears that America possessed two, and two only, which were capable of becoming bases of advancement, and that one of these was indigenous to each of the two principal areas within which advancement took place. Its origin within those areas is thus explained. In Peru it was primarily due to the presence of the auchenias, and to the special facilities which existed for their multiplication on the slopes of the Andes, and was favoured by the near neighbourhood of the maize-growing district of the Plate River Basin. In Central America and Mexico it was exclusively due to the facilities which their elevated plateaux afforded for agriculture, and to the presence of the Euchlaena grasses, the only original forms of maize hitherto discovered. The aboriginal advancement of America thus appears to be due to a strictly local development of native means of subsistence. This local development appears further to have been favoured by the comparatively narrow physical limits of the districts to which these two principal food resources were indigenous. For the mountainous regions of Central America and Mexico, on the one hand, and Peru on the other, are not only conspicuous by their isolation from the great continuous expanses of the lower forest districts, but each consists of a number of smaller areas, all more or less isolated from each other, and each, in the natural course of things, attracting and supporting an independent population. This local isolation and sub-division, as will now appear, exercised an

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Migratory and stationary food-production.

important influence on the development of artificial food-production in the mountain districts.

The first effect of artificial food-production is an increase in the numbers that can be supported within a given area. The abundance of food not only furnishes a more ample supply to each individual, but renders it possible to feed an increased number; and population, other things being equal, necessarily increases in the ratio of the food-supply. This increase, however, is limited to the food-producing area. In the case of pastoral populations the limits are wide ones; in that of agricultural populations they are naturally narrower. And this consideration brings us to a point of great significance in the discussion of the connexion of advancement with agriculture and herdsmanship. Both arts have passed through two successive and well-defined stages, which may be called the migratory and the stationary; the former denoting that stage in which food-production is practised over a wide area, portions of which are successively occupied and abandoned, the latter that in which the most favourable spots have been ultimately selected and permanently occupied, and industry, confined within these limited areas, is strenuously directed to the development of their capacities. No pastoral tribe has ever begun to advance until it has thus ceased from habits of wandering and settled within such a limited area. No agricultural tribe which adheres to the method of essartage, by which small separate clearings are made in the forest, where food-plants are temporarily cultivated, and which are afterwards abandoned for others, has ever based any high degree of advancement on this method. The first effective stimulus is invariably given where human effort is confined to narrow physical limits, and where the process of artificial subsistence has consequently assumed a stationary character, which habit has rendered permanent. The application of this distinction to the domestication of the llama, with reference to the distribution of the wild species, is obvious. Although the wild huanaco abounded in the vast plains of Patagonia, the tame animal appears never to have been bred by the wandering

tribes who inhabited them. It was only on the slopes of the Andes that areas existed affording within comparatively narrow limits an ample supply of pasturage—a supply which could be secured and augmented by irrigation, and having natural boundaries within which tame herds could be easily formed; though even within these boundaries large numbers of llamas, owing to the abundance of the domesticated species, and to the difficulty of retaining increased numbers in a state of captivity, are known to have become feral. Some weight, moreover, must be attributed to the fact that high valleys, like that of Lake Titicaca, where the best pastures are found, offered further inducements to the stationary life in the facilities which they afforded for fishing and root-cultivation. The herdsmanship of America, therefore, unlike that of the Old World, seems to have been from the beginning of a stationary character: agriculture, on the other hand, which was practised over a much wider area, remained throughout most of that area in the migratory stage, and only reached the stationary stage in the intertropical mountain districts. In order to realise the great difference between the two stages, and to understand the transition from the one to the other, it is indispensable to form some idea of the method of primitive agriculture. It will then appear why the maize-growing tribes outside the intertropical mountain districts, from Paraguay to Canada, and from the slopes of the mountain-range to the Atlantic, though in possession of the most effective of all instruments of advancement, remained for the most part in the savage stage, and why those of the intertropical mountain districts, by whom migratory agriculture had been for the most part abandoned, are alone found to have attained any marked degree of social progress.

Primitive agriculture in America.

In order to form a true idea of the primitive agriculture of the New World, the modern idea, which the term naturally suggests, of broad surfaces, entirely reclaimed from a state of nature and permanently reduced to tilth, must be abandoned: and we must substitute for it a very different picture, such as often yet meets the traveller's eye in the tropical climates of the New World, and is common

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in the back districts of Brazil. Instead of a scene of orderly labour, we have a spectacle of ruin and destruction. Some part of the forest, distinguished for the abundance and vigour of its natural products, having been chosen as a site for a maize field, the smaller trees and luxuriant undergrowth are cut down at the end of the rainy season, such trees as from their size and hardness present serious obstacles to the process being allowed to remain; and after a few weeks the fallen masses, by this time more or less perfectly dried by exposure to the sun and air, are set on fire. Over this surface, covered with ashes and strewn with partially burnt branches, and in the midst of stumps and blackened trunks, the Indian then plants his maize in holes a few feet apart, relying on the hoe, when the plants have reached the surface, to clear and stir the ground around them and to destroy the weeds. In a few weeks the maize has attained a sufficient height to enable him to plant beans between the rows, the stalks of the corn being utilised as supports for the climbing shoots: and in from two to four months both crops are ready for harvesting. The return which the first crop yields is enormous. In very fertile soils the maize produces four hundred-fold, in soils of ordinary fertility, two hundred, and the poorest usually yields a return of eighty for one; the supplementary leguminous crop yields smaller proportional returns, the best lands producing only sixty-fold, and the poorest not more than thirty. No sooner has one crop been gathered, than the soil is prepared for another. But the second crop yields greatly diminished returns. It seldom exceeds fifty-fold; and unless the yield should be in excess of this average, the clearing is forthwith abandoned. After the second crop, it is left alone for six or seven years, at the end of which time coarse vegetation, consisting mainly of a great variety of weed-like shrubs, only found where the land has been cultivated, is found clothing the surface. These are burnt as before, and the ground is again planted: but the produce even of this first reclearing is very much less than that of the virgin soil. It seldom exceeds a hundred and fifty-fold: and no second crop, to be taken in

immediate succession, can this time be successfully attempted. A single crop having been obtained, the field is again abandoned for several years, when it is recleared for the second time, and planted as before. But the soil is now greatly exhausted: the ashes of the second surface vegetation are wanting in fertilising power: and the scantiness of the return warns the cultivator that the time has come for the final abandonment of the clearing. The secondary forest growths have now in a great measure lost the power of reproduction, and become stunted and weak: cryptogamous plants and sour, fetid grasses, clammy and tenacious, against which the methods of primitive cultivation are powerless, and which prevent the growth of the corn, invade the surface, and the land is apparently lost to the cultivator for ever[1]. Such is the method of essartage, the primitive mode of agriculture all over the world, and widely practised, even yet, where virgin forest land is abundant, for in such circumstances it is the most economical method, because it produces the largest net return. This fact sufficiently explains why throughout the vast area of the forest districts essartage was never abandoned; why, in consequence, agriculture remained a pursuit merely supplementary to hunting and fishing, and never entered on that independent development, by stationary populations, which is necessary in order that it may become the basis of advancement.

Transition to permanent agriculture.

The defeat of man in this desultory struggle with nature in the forest-clad and rain-saturated regions of South America is largely due to the rapid and aggressive growth of the vegetation which supervenes upon his crops: and when it is added that the heat of the tropics discourages the severe toil involved in the breaking up and continuous tillage of the surface, and that the sparsity and wandering habits of a population mainly subsisting on game and fish altogether bar the discovery of the method of renewing the fertility of the soil by manuring, the non-emergence of agriculture from the migratory stage throughout the tropical

[1] Van Lede, Colonisation au Brésil, p. 129; Belt, Naturalist in Nicaragua, p. 186.

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forest region needs no further explanation. In order that cultivation may become permanent there must be a concurrence of the opposite conditions—a concentration of population within separate and limited areas, separated, it may be, from each other by tracts which yield no food at all: there must be increased reliance on agriculture consequent on the absence or the partial disappearance of the large game: there must also be a climate consistent with severe labour, and a soil in the first instance less densely forested, and less subject to the subsequent invasion of corn-destroying undergrowths. In proportion as these conditions prevail, and within the intertropical mountain districts their prevalence is manifest, man will recur more and more frequently to the same area for subsistence, and will apply himself to the task of renewing the fertility of the exhausted earth. In the earliest times this primitive economical problem received a very simple solution[1]. The failure of the soil to yield its original increase, and its aftergrowth of thorns and thistles, were ascribed to the unfavourable disposition of the gods; who, though propitiated by offerings of a portion of the produce, never bestowed on the cultivator the high degree of prosperity which was the lot of the herdsman. The earth was supposed to be subject to a curse, the consequence of the wickedness of its cultivators, who are depicted as a wandering race, ever shifting their settlements in search of soils which would yield them the least laborious and uncertain subsistence. The Bible describes the builders of the first towns, and the inventors of the earliest arts, as descendants of wandering agricultural tribes: and in aboriginal tradition there was current precisely the same description of the builders of the various towns on the Mexican Lake, and of the Inca colonists who founded Cuzco, and spread the knowledge of agriculture throughout the middle cordillera of Peru. When these settlements were established man had already made progress in the solution of the problem above alluded to. Not only had he learned to distinguish good soils from indifferent ones, but he had discovered that

[1] Genesis, ch. iii, iv.

the reproductive qualities of the soil must be husbanded by restricting the burden imposed on it to a single annual crop, or to two at the most, and that its exhausted fertility can be in a great measure restored by subjecting it to a process of surface tillage, which exposes it thoroughly to air and moisture, and by systematically applying to it the stored up refuse of organic life.

Surface tillage in Eastern North America.

On the Atlantic side of America surface tillage had already begun to be developed from essartage wherever the process was favoured by climatic conditions. It is easy to trace the process by which the development took place. We have seen that the earliest agricultural process was the simple perforation of the soil with a fire-hardened stake. Stirring the earth round the young plant, and destroying the weeds, taught man to promote its growth by heaping up the soil round the stem: and in the case of maize, which puts forth its delicate shoots in a few days, this operation was in exposed situations necessary to secure the growing stalk against the force of wind and rain. From this practice the transition is easy to the formation of such mounds, in the first instance: a method generally employed in the manioc-plantations of the West Indies and Brazil, and the maize fields throughout Eastern North America[1]. As the formation of mounds favoured the growth of the plants, they were gradually enlarged: and ultimately, in the place of mounds, the soil came to be thrown up for the reception of the seed in a continuous ridge. Hence we have the so-called 'garden-beds' of aboriginal North American agriculture, traces of which are found from Wisconsin in the north throughout the Mississippi valley to the West Indian islands in the south. Not exceeding four feet in width in their rudimentary form, they are often found of greater breadth, affording space for two or more rows of plants: and from the extent which they frequently cover in the neighbourhood of the sites of ancient aboriginal villages, it can hardly be doubted that they were subject to frequent, if not annual, cultivation. For when the soil has once been thus subjected to thorough

[1] Laudonnière, Histoire Notable de la Floride (1586): Lafitau, Mœurs des Sauvages, vol. ii. p. 75.

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tillage, its increased productiveness naturally leads to a repetition of the process. Thus, even in the temperate forest districts of North America, maize-agriculture had in many places reached the permanent stage at the time of the Discovery. In the elevated intertropical districts, and in the subtropical ones of North America, man appears to have attained the same result by a more direct method.

Natural surface tillage on the Pacific side.

In these districts, though apparently less favoured by nature, the practice of migratory agriculture, though we cannot doubt that it originally existed, appears to have had a shorter duration, owing to physical conditions which did not exist elsewhere. The surfaces of the plateaux of Mexico and Central America are to a large extent composed of soft rocks, the decomposition of which affords a productive soil, while the lower average of the temperature, and the diminished rainfall, are less favourable to hostile aftergrowths, such as check the progress of agriculture in the tropical forest. It is, however, in the valleys of rainless tracts that nature points the way most clearly to permanent cultivation. Here the periodical overflow of the rivers leaves the alluvial lands on their banks in the condition of a natural seed-bed, available for the cultivator's use with little or no labour: a phenomenon exemplified in some parts of the Old World, and especially prominent in Egypt and Babylonia. The process is clearly marked in the rainless valleys on the Pacific side of America. The regular overflow of the rapidly-descending streams of the Andes led directly to stationary agriculture throughout the coast valleys of Peru: and the same thing took place in those on the eastern shores of the gulf of California. Perhaps the most remarkable example of this natural surface agriculture is found in the lower valley of the Colorado river, which falls into the head of the gulf. Here the annual overflow of the stream fertilises the light alluvial lands of the valley, and enables the Yuma Indians, as it has enabled them for centuries past, to raise with little labour cereal crops sufficient for their subsistence: and a process of a similar character, on a smaller scale, takes place in the higher

valleys throughout the intertropical mountain districts. The torrents which feed the tributaries of the great rivers, the rivers themselves in their upper courses, wherever the rocky walls which enclose them expand and enable them to overflow a broader area, and the lakes which are here and there produced by physical obstacles to their course, have generally thrown up and accumulated deposits of alluvial earth, on which natural vegetation quickly comes into existence after rains and floods, soon, however, to wither under the burning sun, and to augment by its decay the fertility of the soil which produced it. Throughout the highlands of Peru we find scattered valleys filled with such alluvial deposits, often isolated from each other by lofty mountains, and fulfilling all the conditions which are required for the early development of localised food-production in both of its branches. Such valleys, which are best described by their Spanish name bolson (pocket), occasionally occur in groups, each being at a short distance, and of easy access, from the others; and where this is the case, as for instance in the Cuzco district, the conditions are still more favourable to advancement. To hunting and maize-growing tribes, such as entered the high Andes from the Gran Chaco, these bolsones offered strong inducements to permanent settlement. The huanaco and vicuña abounded on the plateaux. While the mountain sides afforded pasture for the llama, the level valleys were utilised for cultivation; and in cultivating them man speedily arrived at the practice of surface tillage. Essartage, if it was employed at all, could not long be practised, because space was limited: and only assiduous labour could render profitable the cultivation of a soil which did not possess the spontaneous fertility of the virgin forest [1]. The mountain streams, laden with mineral detritus from volcanic rocks, which has the property of restoring to the soil the very elements of which cereal crops deprive it, fertilised the

[1] Natural surface tillage was not entirely confined to the Pacific side of the continent. The tribes on the lagoons of the Orinoco, for example, planted their maize in the river-mud when the annual floods subsided (Gumilla, vol. ii. p. 231), and obtained several crops in succession. Here, however, other conditions necessary to advancement were absent.

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valleys in some places by their natural overflow; and by means of artificial channels the benefit of a copious supply of water, charged with this natural restorative, could be extended over much larger areas.

Cultivation of maize in relation to temperature.

Another important circumstance which favoured the establishment of permanent agriculture as the basis of life in the intertropical mountain districts remains to be stated. Among all the intertropical and subtropical tracts of America, these districts produce the finest qualities of maize, and yield the most abundant harvests. The principal reason appears to be that this giant cereal, in order to attain its perfection, requires a comparatively long period of nutrition. The heat of the tropical lowlands forces its growth and brings it to maturity too soon: it generally ripens in less than two months, and sometimes requires only forty days. But the maize of the tropical lowlands is universally inferior to that of the colder tracts of the mountains: it has a rank, weed-like stalk, and a small grain, inferior in nutritive qualities. As the temperature diminishes, the quantity and quality of the crop are improved, provided that the plant is duly formed, and a sufficient degree of solar heat is afforded for a month before harvest. The aborigines of the tropical lowlands early discovered that the hills afforded more abundant crops than the plains[1]: and it may be concluded that as agriculture came to be more and more relied on, a natural movement tended to carry it to and fix it permanently in the higher districts. The period of maturity increases, with the higher level of cultivation, from two to three, four, and five months, as on the plateaux of Mexico, and to an even longer time at the greater elevations of the high valleys of the Andes. A similar gradation, measured by the degree of latitude, is traceable in the maize-cultivation of the United States. The most abundant crops are obtained in Kansas, and the finest qualities in New York, the New England States, and Ohio. The best lands in the last-mentioned districts,

[1] 'Los Indios,' says Gumilla, 'que cultivan el campo limpio . . . cogen poquisimo fruto en comparacion de los otros.' Orinoco Ilustrado, vol. ii. p. 230.

where the mean temperature does not exceed 68°, are said to yield four or five times the quantity produced further south, where the mean exceeds 80[1]. The maximum of productive capacity being thus found in the cooler districts, it is natural to find these districts the centres of the earliest progress based upon agriculture: and the growth of aboriginal advancement in Mexico, Central America, New Granada, and Peru has a significant parallel in the early agricultural importance of the New England States and New York, and more recently in the position occupied by Ohio as the pioneer state of the great West of North America[2].

Artificial extension of cultivable lands. Terraces of Peru.

The extent of reliance on agriculture in Peru at the Discovery is illustrated by the circumstance that in many places not only was every available part of the natural soil utilised for cultivation, but the cultivable area had been from very remote times extended by artificial means. The chief form of this process consisted in the formation of terraces, one above another, on the slopes which enclosed the higher valleys: a practice common in similar situations in many parts of the Old World, and probably adopted in the first instance at the lower levels, for the purpose of preventing the washing away of the soil by the mountain torrents at the melting of the snows. From building walls to retain the soil on the lower slopes of the enclosing hills, the transition is easy to the formation of higher and narrower terraces, to be filled with earth laboriously carried in baskets from below: and the extension of the practice was evidently favoured by the facility with which a succession of such terraces can be irrigated from the plateau above. Like the great terraced fields of Java and the adjacent islands, these works were probably extended year by year, as the

[1] Blodget, Climatology of the United States, p. 421.

[2] The conclusions here stated differ from those of Mr. Darwin, in the ninth chapter of his 'Variation of Animals and Plants under Domestication,' where, however, the question is examined from a different point of view. Mr. Darwin seems to have thought that the finest maize is produced in the hottest climates. American authorities assign this rank to the yellow corn of New England and New York, with its solid stalk, and fat, hard grain, and consider that maize produces its heaviest crops near the northern limit of its range.

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population increased, by the inhabitants of each village labouring in concert under the direction of their chiefs[1]. The valleys of Peru, both on the Pacific coast and in the Sierra, afford the most remarkable instances known of terrace-cultivation on a large scale. Sometimes these artificial fields rise from the level of the valley, above a hundred in number, to the height of 1,000 or 1,500 feet, becoming narrower as they rise, until the uppermost ones are scarcely two feet in breadth. The streams which drain the plateau, confined at their greatest possible height, near the verge of the snow, between stone walls, are carried along the sides of the valley, above or through the highest terraces; and from these aqueducts the water is equally distributed over the soil, falling from one shelf to another in a series of cataracts. In the lower shelves, where the declivity diminishes, the stream diverges into several channels, each irrigating a new series of terraces: and its last remnants flow over the slope which unites the terraced wall of the valley to its level floor[2]. These terraces, called *patanaca* in the language of the Colla[3], to whom their invention is perhaps due, bore the heaviest crops, whether of potatoes, maize, or pulse, which the New World produced. Wherever the Ccapac-Incas extended their dominion, while the level lands were left in the possession of the native chiefs and villagers, the produce of the terraces which the conquerors laid out on the hillsides was reserved for the purposes of government and religion: and in two places the cultivation of maize on these terraces was invested with a peculiarly sacred character. One was the Ccollcam-pata

[1] This process still goes on in Java (Wallace, Malay Archipelago, vol. i. chap. 7). Terrace-cultivation is practised throughout the southern countries of Europe and Asia, and is most largely developed in the mountain districts of China. The resemblance which has often been traced by travellers between Peru and Palestine is to some extent due to the terraces of the latter country (the 'steep places' of Ezek. 38, 20), built by the Hebrew cultivators. The terraced valleys of the Lebanon, towards the Mediterranean, even more nearly resemble those of Peru.

[2] 'Every foot of ground is utilized: every part is artfully irrigated.' (Squier, Peru, ch. 24.) Plans of some of the terraces of Peru are given by M. Wiener in his 'Pérou et Bolivie,' Paris, 1880.

[3] Quichua, *pata-pata*. They are best known by the Spanish name *andenes*.

or sacred harvest-terrace, below the great fortress of Cuzco, where the labours of the agricultural year were begun by the Apu-Ccapac-Inca in person. It was here that maize was said to have been first sown under the direction of Manco Ccapac by his sister, to the service of whose reputed mummy, the *Mama-huaca*, the first-fruits of the produce were dedicated. The other was the island of Titicaca, where sacred maize was grown for distribution throughout the Inca dominion. Terrace-cultivation was also invariably employed by the Incas in their extensive plantations of the coca shrub, an invigorating narcotic indigenous to the hot valleys of the montaña; a fact which has its parallel in the systematic application of this mode of cultivation to the grape-vine, olive, mulberry, and fig in the Old World. The great antiquity of terrace-cultivation in Peru is indicated by the fact that in some places the aborigines knew nothing of its true origin. They ascribed it to the gods, and considered it to be coeval with the world itself. The creator, by his word of command, had caused the terraces and fields to be formed on the steep sides of the ravines, and the sustaining walls to rise up and support them: and he made the irrigating channels to flow by merely hurling a hollow cane[1]. According to other legends the work of irrigation was done under the direction of the gods by various animals, among whom the fox was most prominent[2].

Minor extensions of cultivable areas.

Besides these great terrace works some minor modes of extending the cultivable area may be adduced as illustrating the fully-developed character which in the most populous parts of the New World aboriginal agriculture had assumed. The most densely peopled places in America, in proportion to the areas which they contained available for cultivation, were the Peruvian coast valleys. So highly was the soil in these fertile spots valued, that the houses and temples, and the vast structures used as cemeteries, were in general built on the barren rocks; and in order to obtain further spaces for cultivation the

[1] Markham, Rites and Laws of the Incas, p. 124.

[2] Id., p. 145.

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very sands of the desert which surrounded them were removed, until at the depth of several feet a soil was reached sufficiently moist and strong to carry vegetation. Large spaces thus excavated are found in various parts of the Peruvian coast[1]. A method of extending the area available for cultivation, even more ingenious, was employed in the chinampas, or floating gardens, which until recently might have been seen on the lakes of the valley of Mexico, though they have now ceased to exist. They consisted of a compact substratum of vegetable material, cut from the floating mass of reeds and other aquatic plants which overspreads the surface of the lake, covered with a thin bed of earth, which, being kept in a constant state of moisture, bore rich crops of every kind. Like the terraces of the Peruvian valleys, the Mexican chinampas were of great antiquity. According to the traditions of the Aztecs, the chief of Azcaputzalco, within whose dominion the settlement of Mexico was made, required of them, amongst other tributes, that a chinampa with its crops fully ripe should be brought by water to Azcaputzalco: a demand which plunged them in despair, but with which they were enabled to comply by the timely assistance of their tutelary god Huitzilopochtli[2]. The chinampas, though now no longer found, appear to be still represented by a mode of forming tillage-beds out of the marsh mud, which is employed on the shores of the lake of Chalco. These beds, which still bear the name of 'the floating gardens,' are formed by laying a thick substratum of reeds and other aquatic plants on the muddy margin of the lake: on this is spread a layer of mud, dredged up from the bottom, of sufficient thickness to form a seed-bed. While the surface dries, the plants draw a constant supply of moisture from the mud below, into which their roots penetrate. These artificial plots, from which the vegetable supplies of the city of Mexico are mainly derived, are probably the most fertile gardens on the face of the earth[3].

[1] Squier, Peru, chap. ix.

[2] Duran, Hist. de Nueva España, chap. vi: Tezozomoc, Cronica, chap. iii.

[3] The disuse of the floating chinampas has suggested some doubts as to whether they ever existed. Even the fixed chinampa gradually sinks into its

The terraces of the Andine valleys, the floating gardens of the Mexican lake, and the sand-excavated fields of the Peruvian coast, alike illustrate that tendency to give labour and ingenuity new forms of employment which distinguishes cereal agriculture, when it has reached the stationary stage, in a higher degree than any other method of food-provision. One of the most important among these transformations of labour arises out of a difficulty attending the cultivation of corn which results from the climatic conditions of the intertropical Pacific districts, and which has been shown to have been experienced by the early cultivators of maize in Mexico. Throughout these districts, in consequence of the interception of the moisture-bearing winds by the great mountain-range, and of some other physical conditions already enumerated, the rainfall, so essential to the growth of maize, is either uncertain, as in the Mexican plateau, or entirely deficient, as in the Peruvian coast valleys and the arid districts north of Mexico. This circumstance, while in the first instance it prepared the way for agriculture by setting bounds to the growth of the tropical forest, seriously obstructed its adoption as a per-

muddy foundation, and in a few years has to be reconstructed by laying on the top of the soil a new bed of rushes, and covering it afresh with mud. A body which sinks in mud is not likely to float in water. Similar structures, it is argued by Judge R. A. Wilson, in his 'New History of the Conquest of Mexico,' p. 486, even if they could be floated on the lake, would sink to the bottom in a short time, and could not in any case be kept afloat long enough to ripen their crops. Probably a smaller quantity of earth than is here assumed was sufficient to form the seed-bed. Humboldt distinctly speaks of both fixed and floating chinampas as existing in his time; Acosta and Clavigero, both good authorities, seem to have actually seen them; and Martinez, Hist. de la N. España (Mexico, 1606), mentions the removal of a chinampa, between two boats, as a matter of every-day occurrence in his time ('se lleve entre canoas de una parte á otra, como se ve de ordinario en esta laguna de Mexico'). Mr. E. B. Tylor (Anahuac, p. 62), entertains no doubt as to the floating chinampas. The following facts relating to the existing chinampas may assist the reader in forming his own opinion. (1) The *cinta*, or heavy mass of aquatic vegetation, from which the raft or mat which forms the base of the chinampa is always cut, itself floats naturally, and has no attachment to the bottom of the lake. (2) Large masses of the *cinta*, detached by storms, float about the lake and into the canals. (3) For some time after the chinampa has been formed, it does in fact float on the mud, and is dragged from its first position in order that the cultivator may have access to it on all sides from his canoe (Ober, Travels in Mexico, 1884, p. 336).

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manent basis of life. At first the want of rain was met by simple manual watering: the Indian women descended to the streams, as they still do in Mexico and Central America wherever irrigation is not practised, and laboriously carried up water for the maize plants in earthen vessels. To dam up the lateral springs which feed the streams was an obvious labour-saving expedient: and from this the cultivators proceeded to control the tributaries which swell the principal watercourses, and ultimately to divert the main body of the water which poured through the valley to a level high enough to irrigate their maize-fields. This development of irrigation is illustrated by a legend once current in the mountain district above Lima, according to which the localised kin or *ayllu* of Copara derived their only irrigating supplies from a single dammed-up spring near their village, until a local god, enamoured of a maiden of the *ayllu*, whom he found weeping because her crop of maize was perishing for lack of moisture, diverted a large stream at a higher point in the valley, and constructed for it a new irrigation channel[1]. Systems of simple irrigation, each confined to a single valley, were common throughout the intertropical mountain districts: and in some of the coast valleys of Peru, where the watercourses become absolutely dry during a great part of the year, reservoirs of enormous size were formed, such as are still to be seen in the valleys of Nepeña and Moche. Higher up in the Andes irrigation was carried out on a far more extensive scale. Partly by tunnelling through the solid mountains, partly by carrying channels round their sides, circuits being often taken of extraordinary length, the waters of the higher valleys, where the supply was abundant, were made available for the cultivation of others where it was deficient: and in the district between the central and western Cordilleras, to the northward and westward of Cuzco, such channels were extensively constructed to irrigate not only

[1] Markham, Rites and Laws of the Incas, p. 144. The god (Paria-cacca, 'God of the Sparrow Rock') changed the maiden, at her own request, into a rock at the head of this new irrigation-channel. This rock was still worshipped by the aborigines in the time of Father Avila (1608) in whose memoir the legend is found.

the valleys, but the llama pastures on the mountain sides[1]. In Mexico, Central America, and New Granada, though irrigation was in many places resorted to, it was never developed so completely as in Peru[2]: but in the arid districts to the northward of Mexico, where the climatic conditions of the Peruvian coast are repeated, we have accumulated evidence that aboriginal agriculture was practised on a large scale, and was entirely dependent on irrigation. Some of the pueblos of Arizona, now long since deserted, drew their supply of water by canals from rivers several miles distant.

Irrigation for the purpose of warping.

In the Old and the New World alike, irrigation is frequently employed not only in districts where the rainfall is deficient or uncertain, but in others where there is no lack of regular rains and dews. This usually happens where the streams issue from soils of volcanic origin; the reason being that water derived from such sources serves not only to supply moisture, but positively to renew the exhausted fertility of the soil by depositing upon it mineral detritus, washed from the mountains at the melting of the snow, and containing the very elements of which the soil is robbed by the cultivation of cereals. In most of the provinces of Persia, and in a great part of Armenia and Asia Minor, irrigation is said to be mainly employed for this purpose; and it is certain that the water of the *lodazales,* or muddy torrents of the Andes, applied in the same way, served to

[1] Garcilasso (Lib. V. ch. 24) speaks of two high-level channels for irrigating the pastures, one 120, the other 150 leagues in length, the former having been designed by the Ccapac-Inca Huiracocha. We can only conclude from his descriptions that these, if they existed at all, were one and the same. Though a series of irrigation channels may have once extended in the direction which his description indicates, the existence of any connected system on such a scale as he alleges has not been verified. Cieza de Leon, while he minutely describes the district where the headwaters of the channel are said to have been, makes no mention of it.

[2] Why irrigation was less practised in Mexico than in Peru is obvious. The great snow-capped range of mountains, by which the innumerable streams of the latter country, east of the Cordillera de la Costa, were constantly fed, was wanting. Hence, in Mexico, the greater dependence on the rainfall and the continual worship of the rain-gods (Mex. *Tlaloc*, Maya, *Chàac*), who were propitiated with sacrifices at four great festivals during the year. See H. H. Bancroft, Native Races of the Pacific States, vol. iii. pp. 332–348.

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fertilize tracts which no supply of mere atmospheric water, however abundant, could have sufficed to keep in cultivation. Extensive tracts of volcanic soil in parts of the Central American and Peruvian plateaux where the rainfall is ample, exhausted by cropping, have become almost valueless in consequence of their inaccessibility to irrigation; while similar land under irrigation from the *lodazales* appears to be perennially fertile. It may therefore be concluded that the irrigation channels of the New World, especially those of Peru, by a process analogous to that of warping, practised on the shores of the muddy rivers of the north of England, supplied the soil at once with water and with a powerful mineral stimulant in the form of mud washed from the disintegrated rocks of the snow-mountains. This, indeed, is assigned as the principal cause of the continuous fertility of the most thickly populated aboriginal districts, such as the coast valleys of Peru [1]. The ordinary methods of manuring by manual dressing were also employed: a process which may evidently be traced to the natural practice of spreading over the soil the ashes of the burnt vegetation, when forest patches are from time to time cleared for cultivation by essartage. When a second crop of maize was taken, the tall dried stalks of the former crop were uprooted and burnt; and great importance was attached to this process in the agriculture of the maize-growing Indians of Eastern North America [2].

Manuring.

The knowledge that the fertility of the soil can be in some measure renewed by applying to it the refuse of animal and vegetable life probably dates from the period of migratory agriculture. Possibly maize was found to thrive most luxuriantly in the neighbourhood of the dwellings, where organic refuse would naturally be thrown. The huts, moreover, of wandering cultivators, naturally placed in the vicinity of their plantations, were abandoned when the time came for seeking fresh clearings; and it may

[1] Dr. Moritz Wagner, quoted by Liebig, 'Natural Laws of Husbandry,' pp. 403–405.

[2] Lafitau, Mœurs des Sauvages, vol. ii. p. 75.

fairly be supposed that when, in the course of time, the same tract was reverted to, it was found that the sites of the former dwellings, where organic refuse of various kinds had accumulated, were distinguished by an unusual degree of fertility. We know, at least, as a fact, that in Mexico, where essartage was still employed in the wooded tracts, lands once occupied by human habitations were distinguished by a particular name and were always considered to yield very abundant crops[1]. Both in Mexico and in Peru the land was regularly dressed with poudrette; and as its produce was for the most part consumed upon the spot, the conditions which, according to Liebig's law, suffice to ensure the continuous fertility of the soil must have been at least partially fulfilled[2]. Owing to the want of domestic animals, manuring occupied a less conspicuous place in the agriculture of the New World than in that of the Old, and it was chiefly of importance where population was extremely dense. In the coast valleys of Peru, for instance, where, in consequence of the great increase of population and the limited space available for cultivation every expedient had to be adopted to augment the fertility of the soil, not only was the ordinary refuse of organic life systematically employed for this purpose, but fish was commonly buried as a manure with the maize seed, and recourse was regularly had to the deposits of the guano of sea-birds, which existed in great abundance on the headlands and the neighbouring islands[3]. Where population was comparatively sparse, manuring was of less importance, for essartage could still be partially practised, while stationary agriculture depended for its success mainly on thorough tillage, combined, in the districts where the rainfall was scanty or uncertain, with irrigation. Where neither irrigation nor manuring was

[1] Sahagun, Hist. General, Lib. XI, chap. 12.

[2] Liebig, 'Natural Laws of Husbandry,' chap. vii, and Appendix on Japanese Husbandry.

[3] 'In Peru,' says Dr. M. Wagner, 'the fertilising action of guano is more enduring than in England, because the potash which the guano does not restore to the soil is there supplied in the detritus from the trachytic constituents of the Andes ridge, which abound in felspar.' Liebig, p. 404.

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practised, there was a practical survival of essartage: for the fields, even when reduced to tillage and enclosed by walls, were necessarily allowed to remain fallow for a longer or shorter period, in order to enable them to recover their fertility. Such is the case even to this day in the Collao, where, as a rule, the fields are only subject to cultivation every fifth year[1].

Formation of the Calendar.

Concurrently with these purely material developments of ingenuity there appear for the first time, in connection with stationary agriculture, the beginnings of progress of a different kind. To the necessities of this mode of food-provision we trace the first study of the solar phenomena with a view to the determination of the periodical returns of the seasons, and incidentally to this, of the length of the year. Savage peoples, who invariably reckon by lunations, have nevertheless some general knowledge of the solar phenomena, and of their relation to the seasons; and tribes whose food supplies regularly vary with the time of year often have a rude calendar, consisting of an annual succession of moons, any which happen to bring with them some particular supply of food receiving corresponding names. Agriculture in temperate climates requires the solar phenomena to be studied more closely. The cultivator must so arrange his labours that his land may be in tilth, and ready for the seed, at a time favourable to germination; the time of the growth of the plant must coincide with the season of rain, its blossoming with warm weather, and its maturity with the hottest sunshine. Where irrigation is practised, in addition to these requirements, the channels must be set in order before seed-time. The necessity for some method of ascertaining the periods of labour is most pressing in rainless districts; but it manifests itself wherever agriculture has become the main business of life. The knowledge that the seasons recur after the lapse of twelve moons is of little practical use: for as twelve lunations fall short of the solar year by about eleven days, while thirteen exceed it by about eighteen days, it is obvious that to reckon by continuous successions of moons, without

[1] Forbes, Aymara Indians, p. 71.

reference to the annual motion of the sun, must ultimately mislead the cultivator. The foundation of the agricultural calendar is the solstice. Among tribes which have become stationary through the practice of agriculture, it is quickly observed that the varying lengths of the day and night are coincident with changes in the apparent height of the noon-day sun, in the length of the shadows cast by familiar objects, and in the parts of the horizon where the sun rises and sets; and in mountain valleys, where every feature in the landscape serves as an index of such changes, man naturally learns to mark the approach and arrival of the solstices and equinoxes, and to utilise this knowledge for the regulation of the labours of the field.

Calendar Feasts.

The winter solstice marks the period at which the labours of the field are renewed; the vernal equinox gives an approximate indication of the period of sowing. To ascertain these periods, and to fix each of them firmly in the minds of the people by a religious festival, answering to the Christmas and Easter of the European world, is a frequent practice with agricultural nations: in America we find it established both in Peru and in Mexico. The arrival of the winter solstice, which in Peru occurs in June, was celebrated by the Intip-Raymi, or great feast of the sun; while in Mexico, where it occurs in December, it was marked by one of the three great feasts of the national god Huitzilopochtli[1]. The principal Peruvian festival, the Ccapac-Raymi, the national feast of the supreme creator-god Pachacamac, took place at the summer solstice, when, according to most of the authorities, the new year was understood to begin[2]; a fact which has a singular parallel in the celebration of the great national feast of Zeus at Olympia in the first month of the Attic year, a few days after the summer solstice. The vernal equinox, which in Peru occurs in September,

[1] Compare the *brumalia* or festival of *sol invictus* at Rome, which appears to be the origin of Christmas (see Smith's Dict. of Christian Antiquities, art. 'Christmas'), and corresponds to the 'Yule' of the Teutonic peoples.

[2] Molina, Fernandez, and Garcilasso, however, date the new year from the winter solstice. Probably the year commenced at different times for different purposes. The Hebrews had four different New Year's days (Mishnah, ed. Surenh. vol. ii. p. 300).

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and coincides with the beginning of the rainy season, was the occasion of the third great feast of the Inca year, the Ccapac-Situa, or Ccoya-Raymi (feast of the moon). In Mexico, where the rains commence about a month later than the equinox, the principal feast of Huitzilopochtli, which took the place of this equinoctial festival, was held in the beginning of May, and marked the reinvigoration of nature by the rain. Even the partially agricultural peoples of the forest districts had their calendar feasts. The *busque*, or solar festival, the principal among the seven feasts of the Muscogee tribes, took place after the summer solstice, when the maize had arrived at maturity. This feast was regarded as the commencement of the new year, and fresh fires were accordingly made by friction, in honour of the fire-spirit who dwelt in the sun[1].

Modes of determining the Solstices.

In Peru, a device called the *Inti-huatana*[2] was employed to measure the annual changes in the sun's position. A prominent rock, easy of access, having been selected in some exposed situation, the top was cut away to a level surface everywhere except in the centre, where the solid stone which remained was reduced to a small truncated cone. Day by day, as midwinter approached, under the cloudless sky of the Peruvian highlands, the curve formed by the slowly-advancing shadow of the *huatana* was watched. As the sun declined to the northward the shadow lengthened, until it touched a well-known line which it never passed. The longest shadow of the *huatana*, when the sun was at its noon-day height, marked the great Sun-festival: the summer solstice, which brought with it the great feast of Pachacamac, was determined by the shortest: the Situa was fixed by the arrival of the sun at the vernal equinox, to determine which a line was traced on the floor of

[1] Bartram, Transactions of American Ethnological Society, vol. iii. pp. 26, 67.

[2] *Huatana* means a peg, or that on which anything is hung: the shadow apparently hung from the gnomon. This is the most natural explanation; but some writers explain it as denoting the line on the flat surface of the rock which the shadow never passed, and where the sun therefore appeared to be tied (*huatan* = he ties). The solstice itself appears to have been called *Inti-huatana*: 'Ollanta,' vv. 119, 1211, 1436 (Ed. Middendorf).

the *huatana:* and by counting the days which elapsed between the successive recurrences of the shadow to the same spot, the length of the solar year was determined with sufficient accuracy for agricultural purposes. The use of the *huatanas*, many of which are still to be found throughout Peru[1], was always explained by the Indians to be the regulation of the labours of the field, and of the annual religious festivals which were associated with them. Square mounds, paved at the top, and having pairs of similar vertical cones, placed east and west, were built for the same purpose in Central America and Mexico[2]. Another method, perhaps a more primitive one, of marking the solstices was sometimes employed. Four groups of stone pillars, called *pachacta-unanchac*, or indicators of time, were erected on eminences, two in the direction of sunrise and two in that of sunset: the solstices were known to have arrived when the sun rose and set between the middle pair in each group[3]. Twelve natural months or lunations, the commencement of the succession being regulated by the winter solstice, constituted the Peruvian year. In Mexico, where astronomy had been more closely studied, the calendar had assumed a more advanced form; the lunar reckoning had been entirely abandoned. Not only had it long been ascertained that the year consisted of three hundred and sixty-five and a quarter days, but a method of reckoning by cycles of fifty-two years had been established, at the end of each of which the calendar was rectified by intercalation. The civil year of 365 days was divided into periods of five days, which answered the

[1] The best example is at Pisac, in the valley of Yucay: others are found near the foot of the Collcampata at Cuzco, at Ollantay-tambo, at Guitera in the valley of Pisco, and at Titicaca in front of the building sometimes called the temple of the sun. 'Almost every place of importance in the more ancient parts of the Inca empire seems to have had its Inti-huatana' (Squier, Peru, p. 526). Those of Quito, which were regarded with peculiar veneration, because being under the equator they cast no meridian shadow at the equinoxes, were destroyed by the Spaniards.

[2] That of Mayapan is described by Ober, Travels in Mexico, p. 97.

[3] Garcilasso de la Vega, Lib. II, ch. 14. Compare Middendorf, Ollanta, p. 29. The solstitial pillars of Cuzco, which Garcilasso describes as existing in 1560, have disappeared.

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purpose of weeks: four of these made up a conventional month, consisting of twenty days; eighteen conventional months, and one conventional week of five days, made up the civil year. The cycle was computed by independent periods of thirteen days. Fifty-two civil years were equivalent to 1460 of such periods: and at the end of this cycle an intercalary period of thirteen days was added, the effect of which was precisely the same as if an additional day had been reckoned every fourth year. The Toltecs, to whom this ingenious system is due, had thus attained the same degree of correctness, in computing the length of the year, which sufficed for the civilised world of Europe before the introduction of the Gregorian rectification of the calendar.

Art of Masonry.

The construction of the *Inti-huatana* manifestly implies considerable skill in masonry; an art which, if it does not make its appearance for the first time in connection with stationary agriculture, has universally received from the latter an important stimulus. The dwellings of wandering tribes are naturally composed of some slight material, such as bamboos or brushwood, thatched with palm-leaves, or covered with the skins of animals. Within the forest districts, as man becomes more settled, he builds with timber in a more substantial manner: but it is only when he has permanently occupied definite tracts of food-producing soil that he begins to build in stone. It is a significant fact that while the intertropical mountain districts abound in stone buildings of aboriginal construction, such buildings were not in general met with throughout the forest districts[1]. The art of masonry may therefore be ranked among the transformations of labour which are induced by stationary food-production: and the degree of advancement based on attachment to the soil may be approximately

[1] Rough stones, as well as masses of clay mixed with dried grass or reeds, were sometimes used by the mound-builders of Eastern North America, but they do not appear to have constructed stone houses. The chambers occasionally found in the mounds are of timber, plastered externally with clay. The observation in the text does not apply to lowland forest districts like Chiapas and Yucatan, into which advancement had been extended from the mountain districts.

measured by the number and importance of the buildings which are erected upon it, and by the attention bestowed upon their structure and decoration. Beginning with the simple hut, built to shelter himself and his family, and the rude tomb which contains the remains of his dead, the cultivator or herdsman advances to the building of stone enclosures to confine his herd from wandering, or to protect from animals the crop which he has planted. The cultivator of cereals, as we have already seen, advances from these simple efforts to the complex work of agricultural terraces, and to the still more difficult task of laying out and constructing irrigation channels. In a yet more advanced stage, the settled agriculturist proceeds to the erection of temples for his gods, whose favour, obtained by regular sacrifices of food, he considers to be indispensable to the success of his labours, and of large dwellings and fortresses for the tribal chiefs, to whom the duties of organisation and defence are entrusted. As the area of the domination of the latter is extended, and as inter-communication for miscellaneous purposes becomes more frequent, roads are made leading in the first place from one village to another, but ultimately extending through large tracts of country[1]: outposts are built to protect from the incursions of savage or merely hostile neighbours, and various buildings come into existence for subsidiary purposes which will more fully appear in the subsequent description of the territory of the Ccapac-Incas. Masonry, the appearance of which, next to agriculture, most certainly signalises man's emergence from the savage state, is the direct outgrowth of the latter art, and the labour it employs appears to be a simple transformation of the labour which was originally employed in the tillage of the soil[2]. Settled agricultural peoples alone erect extensive

[1] Road-making must not be understood in the modern sense. As the aborigines possessed no wheel-carriages, and no animal of greater burden-power than man, simple tracks sufficed as roads, and no substantial works were required except occasional bridges, cuttings, and embankments. The celebrated high roads of the Incas were not continuous pieces of engineering.

[2] As an illustration of this, it may be remarked that in the German language cultivation of the soil and building are expressed by the same word (bauen). The original meaning is 'permanent habitation,' of which agriculture and building are the symbols.

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buildings, because only organised agricultural labour can accumulate the stores of food necessary to sustain the labour engaged upon them; nor could anything but the severe training of agricultural labour, based on the necessity for continuous and ever-extending food-production, have formed the fixed habits of industry which their construction implies [1].

Building in aboriginal America—Cave-dwellings.

At the Discovery, the advanced aboriginal peoples had not only made considerable progress in the art of building, but a distinct architectural style had been formed in each of the two principal groups [2]. Differing greatly in their details, the Maya-Mexican and Peruvian styles of architecture have this common feature, distinguishing them in a marked manner from the principal architectural styles of the Old World, that each represents a pure development of the art of masonry, without a single feature borrowed from the kindred art of working in timber. The carpentry of the aborigines was of the most rudimentary kind: a defect due to the fact that this art requires advanced iron tools, which the Indians did not possess [3]. In the mountain

[1] It was the policy of the Inca government to keep the Indians always employed; and each was bound to serve the government with two months' labour, called the *mita*, which must necessarily have been given when the tillage of the land was over. It hardly needs the testimony of Blas Valera (Garcilasso, Lib. V. cap. 16) to prove that the compulsory labour of the *mitayoc* was primarily devoted to the making and repair of roads, buildings, and irrigation-works.

[2] Pictures representing masons at work on walls of adobes or cyclopean stones sometimes appear on Peruvian pottery. See Wiener, Pérou et Bolivie, pp. 471, 481. Occasionally small houses are among the objects depicted: a terra-cotta vessel in the museum of Cuzco shows a small two-storied house, in the lower stage of which llamas are lodged.

[3] Both the Mexicans and Peruvians possessed bronze tools, but these only sufficed for carving: carpentry, in the strict sense, was unknown. Their most advanced works in wood were dug-out canoes (scarcely used in Peru), images, and stools made out of a single block of wood. Having no saws, they could not make deals or planks, and the tedious process of squaring timbers was little practised. The roofs, where wooden roofs were used, and the entire structure of their wooden buildings, were made, like the timber-houses of the forest districts (see Wallace, Travels on the Amazon, ch. xvii), of small unsquared trees or bamboos which were bound together with ropes of grass or aloe-fibre, or strips of hide, instead of the split creepers in use in the forest districts. Bamboos for building purposes were brought in large quantities to Mexico from the lowland districts as part of the tributes. There were no doors: curtains of hide, matting or cloth supplied their place. Timber was

districts, moreover, the scarcity of timberlike trees compelled the cultivators, as they extended their settlements, to have recourse to stone as their chief building material: and its employment for this purpose would seem to be directly suggested by the primitive practice of occupying mountain caves as human dwellings. A cave is a ready-made house: all that is necessary to complete it is a wall of rough stones at the entrance, with apertures for ingress and light. Both in the Old World and the New, caves were used during countless generations as the dwellings of savage man; and it is therefore usual to associate cave-habitation with the state of savagery. It appears, however, that in both worlds caves continued to be inhabited by herdsmen, who used them as shelters for themselves and their animals, and even by tribes who depended largely upon agriculture[1]. In south-western Colorado the connexion between cave-dwelling and building in stone cannot be mistaken. Not only are the cliffs of the great cañons honeycombed with cave-dwellings, which have been transformed into houses by front walls and internal partitions, but houses of considerable size have been separately built in the larger recesses of the rocks. Like the caves themselves, these houses were once inhabited by maize-growing tribes, as is proved by the remnants of their stores; and they have only been abandoned in comparatively recent times[2]. There can therefore be no difficulty in accepting as historical the traditions which describe the early Mexicans and Peruvians as cave-dwellers, though the former were cultivators, and the latter both cultivators and herdsmen. The seven agricultural nations of Anahuac are described as having issued from seven caves in some district to the northward,

used for upper floors, and occasionally for the lintels of doorways in buildings of stone or adobes: sometimes (in Yucatan) these wooden lintels have carved surfaces.

[1] Barley-growing cave-dwellers were found in the Caucasus in the time of Strabo (Lib. XI). On the advanced Cushite cave-dwellers of Abyssinia, who excavated their dwellings in the heart of mountains of granite and marble, used arithmetical symbols, and carried on a trade in gold and spices, see Bruce, Travels, vol. i. 377–386. Some of these caves were converted into churches in the twelfth century (Id. vol. iii. p. 741). The Carib gods were lodged in caves.

[2] De Nadaillac, Prehistoric America, chap. 5.

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that is, in the direction of the very district where cave-dwellings are most abundant; and in Oajaca, to the southward, caves still remain which were apparently inhabited by the ancestors of the Zapotecs. In Peru the cave of Incap-tampu (Paccari-tambo), which was reputed to have been the dwelling of the joint family of Manco Ccapac before the removal of their settlement to Cuzco, was preserved in the times of the Incas as an historical monument. Like the Colorado caves, it consisted of a simple excavation in the rock, fronted with a wall, in which square openings were left for light and ingress. Manco Ccapac was accompanied by llamas when he issued from the Incap-tampu: a circumstance which reminds us of the cave-dwelling herdsmen of Africa, described by Diodorus and Pliny, as well as by recent travellers, of those of Arabia, known in Arab history as the Thamûd, and mentioned in the Bible under the name of the Khôrîm, or cave-people, of Mount Seir, whither they afterwards migrated, and of others in European legend [1].

Rock-cutting.

Both in Mexico and Peru we have a peculiar development of the art of rock-cutting analogous to the cave-tombs and temples of Egypt, Arabia and India; and though the existing remains are of a different character, and on a much smaller scale, they are sufficiently numerous to justify the conclusion that the primitive practice of hewing the solid rock largely contributed to the skill of the aborigines in masonry. The *inti-huatana*, already described, is an advanced form of its employment. This art consisted simply in removing so much of the native rock as was necessary to carry out the design of the workman. Continuous galleries, the purpose of which was probably religious, have been thus excavated in conspicuous rocks, as at Copacahuana and Titicaca; where it was necessary for the execution of the design, the sides of the passages have been supplemented by masonry. Sometimes flights of steps, niches, and channels for libation have been cut in

[1] Odyssey, Book IX. Cave-tombs continued to be used in Peru long after cave-dwellings had been abandoned: those of Pisac and Ollantay-tambo are instances. The same thing occurs in the Old World (Egypt, Palestine, &c.).

solitary rocks, such as that of Concacha, near Abancay; in such cases it is easy to see that a sacred character was attributed to the rock itself. Another employment of this art is exhibited in the so-called 'tribunals of the Inca.' These are rows of seats, of varying breadth, arranged one above the other, and hewn with perfect precision in the solid stone. The various forms of this singular art are best illustrated by the dome-shaped rock called the Rodadero, and the rocks on the adjacent plateau, beyond the Sacsa-huaman, at Cuzco[1]: in Mexico it will be sufficient to mention the galleries and subterranean apartments excavated in the terraced hill of Xochicalco. An extraordinary example of the art of rock-cutting is said to have once existed near Tiahuanaco. If the authority by whom it is described may be credited, it was a monolithic building, forty-five feet long, and twenty-two broad, every part of which was cut out of the solid rock, not excepting the roof, which was finished externally in imitation of the thatch of dried grass usual in the buildings of the Collao[2]. Possibly this account should be interpreted as meaning that the masonry was so perfectly finished as to have all the appearance of a monolithic monument. No one, however, who has studied the masonry of Peru will pronounce such a work to be impossible. It is certain that the art of hewing the native rock was carried by the people of the Andes, with no better tools than stone, to a high degree of perfection, and that enormous monoliths, by similar methods, were so treated as to combine in one block several architectural features. The famous portals of Tiahuanaco are large monoliths, out of which the doorway has been hewn, leaving the jambs,

[1] 'The rocks all over the plateau, back of the fortress, are cut and carved in a thousand forms . . . all cut with the accuracy and finish of the most skilful worker in marble. In one or two instances these rocks had walls of cut stones built up around or in part against them, and have traces of small edifices on their summits . . . . One part of a low limestone cliff, not far from the Rodadero, is called the Chincana, or labyrinth. It is much fissured naturally: these fissures have been enlarged by art, and new passages opened, with low corridors, small apartments, niches, seats, &c., forming a maze in which it requires great care not to be entangled and lost.' Squier, Peru, p. 476.

[2] Diego de Alcobaza, ap. Garcilasso de la Vega, Lib. III. ch. 1.

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threshold, and lintel in a single piece; and at the same place there exists the base of a shrine large enough to contain several worshippers, of which the foundation of the massive walls, the floor and the steps, are hewn in a single enormous slab. It is difficult to believe, but it appears to be nevertheless the fact, that these immense specimens of the mason's art have been shaped by means of stone implements exclusively[1].

Architecture in aboriginal America.

No further explanation can be necessary of the fact that stone became the chief building material of the aborigines of the mountain districts. As in the Old World, the earliest walls usually consist of irregular masses of stone of enormous dimensions, the interstices between which have sometimes been filled up with smaller blocks, accurately adjusted[2]. Smaller stones, fitted to each other in the manner of mosaic, rather than laid in regular courses, mark the next stage: in the last stage regular courses make their appearance. No people on earth has surpassed the aborigines of America in the art of plain masonry: and much of the skill which they displayed in its employment is clearly due to practice in the construction of terrace-walls and irrigation channels. Though the greatest development of architectural ornamentation and of general sculpture occurs in the works of the Mayas of Yucatan, the peoples of the northern group were surpassed in technical masonry, if not in the power of design, by those of Peru, where terrace-building and irrigation were most generally practised. Like the general advancement of the Andine district, the masonry of Peru had its origin in the treeless plain of the Collao, where its progress may yet be studied in every stage, from groups of unwrought stones, resembling the dolmens and enclosures of Brittany, to the elaborate masonry of the structures built by the latest Incas in the

[1] So even in Mexico the masons' tools were exclusively of stone (Torquemada, vol. iii. pp. 208, 212). Sand was used in finishing the surfaces.

[2] The converse of what is here stated, viz., that such walls are of early date, is not universally true. The megalithic style was adopted in some comparatively late buildings, such as the fortifications of the Sacsa-huaman and of Ollantay-tambo, obviously because it was most suitable for works of defence on a large scale.

peculiar style which is found throughout the Inca dominion. In substitution for stone, as a building material, the Indians often employed rectangular masses of clay mixed with broken shingle and chopped maize straw and dried in the sun (adobes). Occasionally, as in the temple of Huiracocha[1] at Cacha, the upper part of the building was of adobes, on a plinth or basis of hewn stone. Sometimes the stones were themselves set in clay mixed with broken pebbles; but the finest masonry is so accurately finished and fitted that the courses, formed of massive blocks, can be laid one on the other without the intervention of any binding material. The architectural monuments of the New World consist of houses of various grades, from the simple hut of the peasant to the complicated structures built for the residence of the powerful families from which the chiefs were chosen; of tombs, varying in type from the simple mound or stone hut in which the remains of a single person were interred or walled up, to the enormous adobe structures which served as cemeteries on the Peruvian coast; of temples of all sizes, from the diminutive hut-like shrine standing in its little maize or manioc plantation, to the great temples or Ccoricanchas of Irma[2] and Cacha, with their vast halls, surrounded by lodgings for priests and pilgrims; and of fortresses, varying from the small hill-fort of rude stones or earth to the frowning terraces of the Sacsa-huaman at Cuzco, the colossal masonry of which can scarcely be matched by the greatest monuments of the Old World. As in the primitive architecture of Egypt and the Euphrates valley, the leading type, that which gives its general character to all the rest, is the terraced mound. The isolated mound thus terraced, whether in the form of the fortified pueblo, like those which still remain at Cholula and Xochicalco[3], or of the *teocalli* or sacred mound, sur-

[1] Erected by the Ccapac-Inca Huiracocha, not in honour of the primitive creator god Ticsi-huiracocha, more generally known as Pachacamac, but of a deceased Inca who appeared to him in a dream. Huiracocha, as will presently be explained, is a general term denoting a deity.

[2] Santillan (Relacion, sect. 28) gives this as the original Yunca name of the valley of Pachacamac.

[3] I follow Mr. Bandelier (who adopts the opinion of Mr. Tylor, 'Anahuac,'

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mounted by one or more shrines, like the so-called 'Pyramids' of the sun and moon at Teotihuacan, was more frequent in the northern group than in Peru; but specimens are not wanting in the latter district, the best-known examples being the great adobe pyramids of Moche and of Nepeña. Usually, however, in Peru, the side of a hill was necessarily chosen as the site of every important structure, and the buildings were placed on the highest of a series of terraces.

Rudimentary character of aboriginal Architecture.

In the aboriginal architecture of the New World the main feature universally remains the plain, massive, rectangular wall, of large stone blocks or adobes. Those subordinate features of construction on the development of which advanced architecture is based, the column and architrave, the pier or pillar and arch, the pediment or gable and cornice, are found in their rudimentary forms, but only the last-mentioned stands forth as a prominent feature in the design. Only in the later Inca buildings do we find the perfect window and its transformation, the niche[1]; and the doorway usually appears as a mere gap in the solid wall, or as an enormous monolith having a square perforation, though occasionally, as at Tiahuanaco, the carving bestowed about it indicates a certain importance, derived from its known position in ritual. Here and there, as at Mitla, we find some approach to a colonnade, in the form of a row of rounded monoliths, placed in the middle of an unusually broad hall for the purpose of supporting the roof; and in the temple of Huiracocha at Cacha a row of square piers, standing between two such colonnades, fulfils the same function. The true arch is very rarely found: but the so-called Maya arch and vault, in which the walls are

p. 186, as to Xochicalco,) in regarding these mounds as fortified villages. The tradition which ascribes a religious purpose to the artificial mounds of Teotihuacan appears to be well-founded. The mound of Xochicalco is based on a natural hill: so, perhaps, is that of Cholula, though it is reputed to be entirely artificial.

[1] The niche, as an external feature, is obviously derived from the window. Internal niches, such as occur in windowless huts, are simple contrivances for convenience. Niches in the form of doors, and having double recesses, sometimes occur, as in the terrace-walls of the Ccollcampata at Cuzco.

joined at a sharp angle by gradual overlapping, are frequent in Yucatan, where also the upper portion of the external wall is sometimes distinguished from the lower by a profusion of carving, supported or surmounted by a cornice. The gable occurs only in some of the later buildings of the Incas. The houses of seclusion for women (*acllahuasi*) in Peru, and some of the larger joint-houses of the tribal chiefs, such as the so-called 'palace' of Palenque, are planned with considerable skill; but in general the principal aboriginal buildings consist of blocks of square, cavern-like apartments, of small or moderate size, entered from each other, having no windows, and communicating with the outside by a single entrance. The want of strictly architectural features was compensated by a lavish use of carved or moulded ornament, the commonest form of which consisted in the repetition of some rectangular pattern, clearly borrowed from the patterns employed in weaving the coarse cotton or woollen cloths which were occasionally used as hangings. Figures of men, invariably draped in elaborate costumes, often representing civil or religious ceremonies, sometimes decorate the walls, either carved in the stone or moulded in plaster: and in Yucatan, among other animals, the turtle, the tapir, and the serpent, the last-named sometimes of colossal size, appear among the sculptured objects. Decorative sculpture is rarest in Peru, where the unadorned walls displayed the fineness of the masonry, or the coarseness of the adobe was disguised by a daubing of clay, painted in lively colours. Low and square in their outlines, and seldom exceeding one story in height, these buildings, roofed in by a gradual overlapping of their upper courses, or by a thatch of reeds, grass, or aloe leaves, laid on rough poles, derived their effect from the massiveness of their masonry, from the size of the terraces on which they stood, and from the broad flights of steps by which they were approached[1].

[1] The most extensive groups of buildings are found in the northern coast valleys of Peru. Some of these, such as the so-called 'palaces' of Chimu, apparently joint-houses, where entire ayllus were lodged, are veritable human hives, packed closely together, and divided into small cells, connected by blind

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Like agriculture and building, some minor arts of life, such as pottery, tool-making, weaving, and metallurgy, originated in the savage state, and were improved with the progress of advancement; but the pursuit of these minor arts in their early stages exercised little or no direct influence on human progress. The reasons of this are easily seen. But little labour is engaged in their pursuit, in comparison with that employed by building and agriculture; the raw material which they employ is not artificially produced, except in the case of the art of weaving; and the products of the labour engaged in them being easily worn out, destroyed, or lost, contribute little to the permanent floating capital, and nothing whatever to the fixed capital, of society. In early times, moreover, such products were considered to be mere personal appurtenances of the owner, and to remain his property after his decease; upon which, in accordance with primitive ideas, they were for the most part withdrawn from further use by being buried with him. The more closely the origins of advancement are scrutinised, the more clearly it appears that its substantial basis lies in the two arts which attach man to the soil by creating in it a gradually increasing immovable capital; and for the purpose of following its progress it suffices to identify the causes which have led to the extension of these arts, and to trace the gradual enlargement of the permanent basis of life of which they are the nucleus. Such causes are obviously traceable wherever man artificially produces greater quantities of food than are actually required for his sustenance, and wherever he applies the process of agriculture to non-alimentary vegetable species, such as those which furnish material for textile fabrics, or to those which fill subordinate places in the system of aliment, and may therefore be classed as sub-alimentary. A review of these applications of agriculture will complete the survey of the elements of advancement based on the cultivation of the soil, and

Extension of agriculture to non-alimentary and sub-alimentary plants.

and narrow passages, and having no traces of windows. See Squier, Peru, ch. ix. The ruins known as Caxamarquilla (a modern nickname) near Lima, largely consisting of similar buildings, cover nearly a square league (Id. ch. v).

will enable us, in the sequel, to see how the artificial societies thus created received their permanent mould from systems of religion and government which the pursuit of agriculture naturally called into existence.

Agriculture and intoxicants.

Before proceeding to consider agriculture in its application to non-alimentary plants, some account must be given of a practice which appears to have exercised an important influence on its extension as applied to food-plants, and especially to cereals. Man never remains contented with water as a beverage. Savages drink the warm blood of game, and the oil of marine animals; in hot climates, the juice of fruits, and the sweet sap of shrubs and trees, either in the natural form or diluted with water, are favourite beverages. Cookery, which preceded the artificial production of food, suggests drinking the liquor in which food has been prepared: and in this practice we probably have the origin of the preparation of drinks from roots and cereals. Alimentary plants have been almost universally employed in the manufacture of beverages. Passing over the application of fruits in this way, it may be noticed that in tropical America the sweet potato and manioc have always been to some extent thus employed [1]. The use of corn, of all descriptions, for this purpose is of scarcely less antiquity than its general use as food: and from our knowledge of the tastes of savage man it may be fairly inferred that the practice received a powerful stimulus from the discovery that infusions of corn, like drinks made from the juices of fruits and the sap of trees, acquire an intoxicating quality by fermentation. The facilities which agriculture afforded for making intoxicating drink, in quantities proportionate to the industry of the cultivator, must have had an important influence in inducing man to adopt it as the basis of life: it is at any rate certain that in most parts of the Old and the New World the produce of cereal agriculture was from an early period largely consumed in the manufacture of some species of beer [2], and that the early cultivators drank

[1] The *Caxiri* of the Rio Negro tribes, made from manioc cakes, is described by Mr. A. R. Wallace as 'just like beer in flavour and effect.' Travels on the Amazon, ch. 9.

[2] Compare the rice-beer of China, the millet-beer of Africa, and the rye-beer

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it to excess. Chicha, the Mexican name by which the fermented infusion of maize was universally known to the Spaniards, had been made from the earliest times by all the advanced aboriginal peoples; it formed part of the sacrifices to the dead and to the gods, and was ceremoniously drunk at the public festivals. In Peru no other intoxicant was known, except a liquor prepared in the same way from the quinoa bean: but the Mexicans drank an intoxicant called *octli* or *pulque*[1], a cheaper and more palatable liquor made from the sap of the great aloe, and in this district occupying a position analogous to that of wine in Europe and Western Asia. The consumption of both octli and chicha had been to some extent diminished by the invention of chocolate, although in the form in which this substance was prepared it can hardly be ranked as a beverage: and the production and consumption of octli were subject to restrictive regulations which will be discussed later on. Hence in the northern group of advanced peoples, though chicha was in use, it was employed to a far less extent than in Peru. Here there was little restraint on its consumption[2], and excessive indulgence in it to have been

of Russia. The use of beer made from barley in Egypt, Babylonia, Syria, and Greece is well-known. Hasisadra took into the ark a supply of both beer and wine (Smith, Hist. of Babylonia, ed. by Sayce, p. 41). According to Diodorus, Bacchus invented beer. Beer was included by the Israelites, together with mead and palm-wine, under the denomination 'strong drink' (shêchar), applied generally to all intoxicants other than wine. Among the less advanced agricultural nations of Europe (Celtiberians, Illyrians, Gauls, Germans, Sarmatians) beer was in use in very early times. Like the chicha of America, it was usually consumed as soon as fermentation had taken place.

[1] *Octli* is the Mexican name. The word *pulque* is perhaps a Spanish corruption of it, though Clavigero considers it to be the Araucan word *pulcu*. *Pulcu*, however, a genuine Araucan word, means chicha (*pulcun* = tō make chicha), and if it had been introduced into Mexico would have been used to designate chicha, not octli. The resemblance between the two words is probably accidental.

[2] *Sora*, or *huiñapu*, the use of which, according to Garcilasso (Lib. VIII. ch. 9) was forbidden by the Incas, as it afterwards was by the Spaniards (Acosta, Lib. IV. ch. 16), was a strong intoxicant offered to the *huacas*, and formed by boiling down chicha with other ingredients. No restriction was placed on the use of simple chicha by the peasantry at the festivals, nor is any punishment for drunkenness mentioned in the full summary of the Inca penal laws given by Herrera (Dec. V. Lib. IV. cap. 2), although chiefs and officials were punished for repeated intoxication by loss of rank and banishment.

considered as a lawful compensation for the labour which the agricultural life involved. The public festivals, indeed, appear to have been always prolonged drinking-bouts. In order that the business of life might not altogether cease, one part of the population abstained from the debauch while the other indulged: and in this way drinking was sometimes kept up for thirty days [1].

Agriculture and drunkenness.

The effect of this mode of employing the products of agriculture affords an early illustration of the law that advancement carries with it the germs of its own decay. Having at first exercised a powerful influence in attaching man to the settled life, the use of intoxicants soon operates as a check on progress and ultimately as a positive cause of ruin. Within the small group of aboriginal advanced societies it is considered probable that two, which in their flourishing times were among the most advanced, fell into decay through the general prevalence of habits of intemperance. The excessive use of chicha appears to have been nearly connected with the ruin of the Peruvians of the coast [2], and that of pulque, at an earlier period, with the decay of the Toltecs [3]: and a similar cause, in all probability, had to do with the disappearance of early advanced communities in the Old World. It has been pointed out that barbarians, to which class all the advanced Americans belonged, remain savages in all that concerns the moral aspect of life, and approximate to civilisation only in its material basis. Savage man is ignorant, but he is logical.

[1] Relacion Anonima (De La Espada, Tres Relaciones, p. 192). Drunkenness usually bears some relation to climate, being more frequent, other things being equal, in cold countries than in hot ones. In America it was most prevalent in the Sierra of the Andes, in many parts of which the cold is intense. The Spanish missionaries found that habitual drunkenness in its association with the native religion, was in the case of the Indians of Peru the principal obstacle to the establishment of a decent standard of morality (Acosta, De Procuranda Indorum Salute, Lib. III. ch. 20–22). On the Atlantic coast, and in the West Indian Islands, drunkenness was much less frequent, notwithstanding occasional debauches: and in Mexico indulgence in strong drink was subject to restrictive regulations.

[2] Cieza de Leon (Cronica, ch. 61) says of the people of the coast valleys that the drinking-cup was never out of their hands; a statement borne out by the frequent occurrence of figures holding goblets on their pottery.

[3] The suggestion is due to Peschel, Völkerkunde, p. 481.

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Deriving pleasure in some degree from a moderate indulgence in stimulants, he concludes that he will enjoy it in a higher degree by taking them in greater quantities; and hence, when the means of doing so are once within his power, he habitually drinks to intoxication. The curse of drunkenness has in all ages attached to tillers of the soil. This is strikingly illustrated by the sottish character which is in Holy Scripture attributed to the early cultivators [1]: and to this cause is probably due something of the disrepute in which agricultural tribes have usually been held by their purely pastoral neighbours. Indulgence in the stimulants which are procured by cultivation being the general symbol of the agricultural life, abstinence from them becomes a symbol of its renunciation. Thus the 'Nabathaeans' of Diodorus [2], and the Rêchabîm of Holy Scripture, tribes which were certainly cognate, if not really identical, who, like some African and American tribes mentioned above, renounced agriculture and abstained from its produce, for this reason rigidly abstained from wine, though it does not appear that they rejected intoxicants derived from natural sources [3]. Districts which afford in abundance the natural material for intoxicants have always been eagerly sought by barbarous man. The presence of the vine, for instance, in Southern Europe exercised a powerful attraction over

[1] Genesis ch. ix, xix. The pre-Mahomedan literature of Arabia not only proves the drunkenness of another agricultural people of Semitic race in later times, but indicates that public opinion censured it, and thus foreshadows the prohibition of wine by the Prophet. 'Let us rise betimes,' says one poet, 'to drink the tawny wine, before the censurers awake!' Another proposes to drink deeply, lest having drunk too little in his lifetime he should be thirsty in the future state. 'To-morrow, when we are dead, it will be known which of us has not quenched his thirst!' Clouston, Arabian Poetry, pp. 23, 24. The drunkenness of the early Aryans of Asia is notoriously illustrated by their deification of the vile juice of the moon-plant both in Persia and India.

[2] Lib. XIX. c. 94. On the name, see Chwolson, 'Die Ssabier,' vol. i. p. 698.

[3] According to Diodorus, his Nabathaeans abstained only from wine, and drank mead made from wild honey: and similarly the omission of any reference to 'strong drink' in the account of the Rêchabîm appears to indicate that their abstinence from wine was merely a part of their renunciation of agriculture. Probably they were not total abstainers, but merely non-agriculturalists. The accounts of these tribes chiefly illustrate the assumed superiority of the herdsman, with his freedom of life and accumulated wealth in cattle, over the cultivator, attached to the soil, and comparatively poor.

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the Northern invaders: and the same cause is indicated in the occupation of Palestine by its mixed population before the conquest by the Israelites, who made no secret of the fact that in their own case the presence of the vine was prominent among the features which rendered it a desirable place of settlement. We have an exact parallel to this in the case of the district of the pulque aloes in America. Long before its final occupation by the seven Mexican nations, the plain of Anahuac appears to have been sought by successive tribes as a place of settlement: and from our knowledge of the habits of primitive man it may be concluded that the presence of the aloe was an important factor in determining that steady influx of the wandering maize-growing tribes from the north which resulted in the settlement of that district which subsists to this day [1].

Extensions of Agriculture. Chilli pepper.

We have next to consider the extension of agriculture to a miscellaneous class of products mostly serving as accessories in the system of aliment. Such are fermentable juices, like that of the pulque aloe, condiments, vegetable fats, the materials for unfermented beverages, saccharines, nerve-stimulants and narcotics, and medicines: another group consists of products which afford material for clothing and for textile fabrics generally. It will be proper, in briefly reviewing this department of agriculture, to consider its objects not strictly with reference to their economical classification, but rather with reference to the order in which they appear to have been reduced to cultivation: and the clue to this order apparently lies in the connexion of each with the cultivation of maize. Such a connexion, though it is traceable in a different way in each case, may be certainly inferred in the case of the principal condiment indigenous to the New World, the capsicum or red pepper, best known by its Mexican name *chilli*, and of the great clothing staple, the cotton tree, the cultivation of which,

[1] The vine was found by the Spaniards growing wild in Mexico, as in the West Indian Islands and in Eastern North America; but the art of making wine from the grape was nowhere known. The 'wine' which, according to Barlow (1584), the aborigines of North Carolina made from the wild grape was the fresh juice of the grape boiled with other ingredients (Hakluyt, vol. iii. p. 249).

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within their respective limits of climate, was from the earliest times associated with that of maize. Man seems to have been led to the cultivation of cotton, which was spun and woven into clothing long before it was reduced to cultivation, by the necessity of providing an increased supply of clothing material for the increased population brought into existence by agriculture. To the cultivation of the capsicum he was certainly guided by a physiological instinct. Experience proves that a healthy population cannot be permanently maintained upon a diet of maize, pure and simple. Its exclusive use is followed by endemic disease of the digestive organs, accompanied by a high rate of infant mortality: and it is easy to see how the pods and seeds of the capsicum, a shrub indigenous to the warmer districts where maize and manioc were cultivated, came first to be employed as a corrective, and thence to be habitually eaten to relieve the insipidity and prevent the deleterious consequences of a purely farinaceous diet. For the same reason ants were mixed with cooked maize in New Granada, powdered limestone with the compounds of maize in Mexico, and clay in the Collao[1]. As man came to depend substantially upon corn, chilli pepper came to be considered an indispensable supplement to the daily meal. Being a powerful digestive stimulant, it enables a larger quantity of farinaceous food to be assimilated than would otherwise be possible: and its reduction to cultivation may therefore be considered as having contributed in some degree to the extension of agriculture, and to the physical improvement of the population. By cultivation the capsicum can be changed from

[1] Ants, according to Herrera (Dec. VI. Lib. V. ch. 6), were an important article of food in the neighbourhood of Tunja, where several species were regularly bred (se sustentaban de hormijas, criandolas porque tenian abundancia, i amasandolas les servian de pan, i unas son grandes, i otras pequeñas, i las tenian en corrales). Ants were also eaten in Mexico. The formic acid assists digestion, and the shell, like the gritty particles of *ppassa*, the clay eaten with all food by the Aymara Indians, is a mechanical irritant. The *nequatolli* or honey-dumpling of Mexico was made with one-sixth of powdered limestone, and one-tenth of metl honey (see post, p. 377). So in Central Africa, from the leaves of the baobab or kuka tree, which is planted near every cottage, a pungent infusion is made which is universally used with farinaceous food.

its natural form of a perennial shrub to an herbaceous annual: a quality which places its use within the reach of migratory cultivators, by whom it was sown in early times side by side with their crops of maize and pulse[1]. The same thing, as will next appear, takes place in the case of the cultivated cotton plant.

The Cotton Plant.

Next to food and shelter, clothing is in cold climates the most pressing of human necessities; in the hottest its use is prescribed by custom as soon as a certain degree of advancement is attained. Man cannot remain long contented with the skins of animals, or matting of grass or reeds: and hence, among domesticated quadrupeds, those whose hair or wool can be spun and woven into cloth are valued scarcely less for this quality than for their primary purpose of food. Weaving is the next art, after agriculture and building, to acquire economical importance; the raw material which it requires, whether of animal or vegetable origin, is produced in increasing quantities as advancement proceeds, and the manufactured product successively appears in primitive economy as a sacrifice, a tribute, and a medium of exchange. Animal and vegetable supplies of clothing material existed in both worlds, but more abundantly in the Old world than in the New. The Peruvians of the Sierra, as we have seen, possessed in the llama and the paco two animals of the highest value in this respect. Elsewhere, no such animals existed: but nature had almost everywhere within the tropics provided a compensation in the form of the cotton tree, the single vegetable species which was cultivated in both worlds alike, and which in both attained an economical importance only inferior to the great cereal food-staples themselves[2]. The beautiful Peruvian cotton-

[1] Several varieties of the chilli pepper were cultivated, varying in colour; some were eaten in the green stage.

[2] The cotton of the New World is superior to that of the Old: that of India, where its cultivation originated, is notoriously of poor quality, and the American cotton, when sown in India, deteriorates and acquires the character of the native plant. The finest known variety, the celebrated Anguilla or Sea Island cotton, is said to be indigenous to Honduras, whence it was taken to the West Indian Islands, and thence, shortly after the revolution, to the United States. Previously to the cultivation of this variety in the Carolinas and

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tree, growing to a height of from ten to fifteen feet, and yielding crops for eight or ten years, represents the natural form of the plant: by cultivation in cooler climates it has changed, like the capsicum, to an herbaceous annual, in which form, like maize, it appears to produce its greatest returns near the extreme limits of its cultivation[1]. In the method of planting, which is done by simply dropping a few seeds into a hole, in the formation of ridges, and the irrigation of the growing plant, its cultivation resembled that of maize: and from the Colorado district in the north to the Plate River in the south, both plants appear to have been artificially produced by the aborigines from the remotest times. Their cultivation, however, is far from being co-extensive. Maize, a hardier plant than cotton, yields its heaviest crops where the profitable cultivation of cotton is impossible: in Mexico and Central America, while the high plateaux can usually be relied on to produce crops of maize, cotton can be safely sown only in the deep sheltered valleys. According to the traditions of the Toltecs, in their golden age, when they were settled in the warm valley of the Tula river, cotton was produced there in extraordinary abundance, and grew naturally of many colours. In the later Aztec age, Mexico was largely supplied with cotton from the valleys in the district of Cuernavaca, to the south of Anahuac. Hence low similar sheltered valleys obtained the general name of *ichcatlan*[2], or cotton districts: the finest stuffs, however, were always manufactured in the pueblos of the plateau. Maize (with beans as

Virginia, the best cotton brought to England was considered to be that from Dutch Guiana: the greater part of the supply came from the West Indian Islands.

[1] In converting the arborescent cotton into an annual or biennial plant the American aborigines were doing precisely what had been done in the Old World. The most scientific cotton growers in the Old World were the Arabs of Andalucia, who in the twelfth century cultivated the plant both in the arborescent and in the annual form, the tree being considered to last twenty years (Yahyá ibn Muhammad, ed. Banqueri, vol. ii. p. 103). From the 'Book of Nabathaean Agriculture' it appears that cotton was cultivated as an annual crop in Western Asia at a much earlier date.

[2] Cf. post, page 372. *Ichcatl*, the Mexican word for cotton, was afterwards applied to the sheep. The plant was chiefly cultivated in the Mexican district as an annual (*ichcaxihuatl*).

a supplementary crop [1]), chilli pepper, and cotton, all of which had undergone considerable modification during a long period of cultivation, may thus be regarded as together constituting the general basis of aboriginal economy [2]: and it is only in Mexico and Central America that this basis had been in any important degree enlarged. In the last-named districts two shrubs which have been already mentioned, the aloe and the cacao-tree, and a third called the chian, of which an account will be presently given, had been reduced to cultivation. It may be concluded, as will next appear, from the traditions of Mexico, that the reduction to cultivation of this latter group of plants belongs to a date appreciably later than that of the former. The remaining cultivated species, the coca of New Granada and Peru, cannot be thus chronologically separated from the general basis: the reason being that the agricultural tribes who occupied the sierra advanced thither from the hot montaña, to which the coca is indigenous. The Mexican tribes, on the contrary, coming from the north, first met with the aloe on the plateau of Mexico; while the use of the cacao and chian was unknown to the early Mexicans, and was learnt in later times from the Indians of the southern districts, Soconusco, Chiapas, and Yucatan, to which these plants were indigenous.

The various species of the so-called American aloe, a group of shrubs resembling the Asiatic aloe in appearance only [3], both in Mexico and Central America, and in

The American aloes.

[1] Ante, p. 332.

[2] The Mexican agricultural tributes consisted chiefly of maize, beans, chilli pepper, and cotton, these crops being grown almost universally. Huauhtli, cacao, chian, and aloe honey were limited to particular districts. The cultivation of cotton, as will appear in the sequel, was an important factor in early Mexican history. Not only was cotton cloth furnished in specified quantities as a tribute, but the weaving of raw cotton was imposed as a servitude by the dominant tribes on the inhabitants of those pueblos where the best cotton fabrics were made; a servitude the enforcement of which led to the final revolt of the other pueblos of the lake, headed by Tezcuco, against Azcaputzalco, early in the fifteenth century.

[3] The true aloe was found in America, and in especial abundance on the northern coast of South America, between Cumana and Caracas. Its properties were known to the natives; the juice of the leaves was applied to wounds, and was also taken internally. It is the true aloe to which Caulin (Hist. de la Nueva Andalucia, Lib. i. cap 6) incorrectly gives the name maguey.

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Peru, afforded a supply of a textile material, coarser than cotton, but of more extensive utility, and somewhat resembling the hemp of the Old World [1]. Out of their fibrous leaves, twine, coarse cloths, ropes, and sandals were made from very early times in both districts; the family of Manco Ccapac were reported to have worn girdles of aloe fibre when they issued from the Incap-Tampu [2]. Though cotton was cultivated by the Toltecs, according to Mexican tradition, when they first occupied the plateau of Anahuac, it is certain that in early historical times cloth of aloe fibre was the principal clothing material, and that until the conquest of the warmer lowland districts by the later Mexicans, the general use of cotton was confined to those warmer districts in which alone the plant can be relied on for a crop in all seasons. Probably the fine fibres of the aloe leaf were used by the early inhabitants of Anahuac in substitution for cotton, and the tree came to be relied on as a permanent source of clothing material in consequence of the frequent failures of their cotton crops. According to Toltec traditions which have been already referred to [3], the cultivation of the cotton plant was abandoned, together with that of maize, in consequence of the destruction of the crops in consecutive years by drought and frost, and the plant only survived, in the feral state, in certain hot and moist situations [4]. Aztec tradition fixed the introduction of cotton clothing into Mexico at the marriage of a Mexican chief with the daughter of a chief of the warm valley of Quauhnahuac (Cuer-

[1] Most of the very numerous species called the American aloes (Quich. *chuchao*, Mex. *metl*, also *mahuey* or *maguey* = 'wonderful' tree, *ma guey* or *huey* being = 'O, how great!' either from its numerous uses, or from the singular properties of the pulque-making aloes) served for the uses here noticed. Several were cultivated in Mexico, but none in Peru, where the pulque aloe is wanting. The slings of the Peruvian warriors, and the great nets used by the fowlers, were made of the fibre of the wild aloe. Probably the Otomis, the aborigines of Anahuac, ate the thick fleshy stump of the leaf (*ma gue* in Otomi = 'flesh'), see note 1, next page: hence the word came into use, and was explained as above, among the Mexicans.

[2] Clavigero says wild flax was found in Mechoacan and New Mexico, though its use had not been discovered. Humboldt doubts this (Essai, vol. iii. p. 191). See Hernandez, Rer. Med. Nov. Hisp. Thesaurus, p. 247.

[3] Ante, p. 324.

[4] Torquemada, vol. i. p. 67.

navaca) about the end of the fourteenth century. Previously to this, aloe fibre was the only clothing material in use; and at the time of the Spanish conquest the people of Tlaxcallan, isolated from the warmer districts by the policy of the allied pueblos of the Mexican valley, had no cotton, and wore cloth of aloe fibre only[1]. The fibres which line the integument of the leaf are prepared for use in the same way as flax or hemp, by soaking them in water, cleansing them, drying them in the sun, and beating or heckling them until they are fit to spin[2]. In Mexico and Central America, the aloe fibre was manufactured into a species of paper, which was made of various degrees of thickness, the stoutest approaching the consistency of pasteboard[3]. The internal substance of the leaf having been steeped, beaten with flat stones, dried, and smoothed, received by the application of a fine white pigment, made of calcined limestone, a delicate surface on which pictographs were executed in brilliant vegetable colours, conspicuous among which was a blue made from the wild indigo plant[4], tempered with the fine aluminous earth called *tlalxocotl*. The hemp aloe, the leaves of which are cut annually as a crop, continues to bear them from twelve to twenty years. In some parts of the Maya-Mexican district, especially in Tlax-

[1] It was probably the soft heart of the plant, cut out when the pulque is taken, which was cooked and sold in the market, and not as Bernal Diaz (ch. xcii) says, the root of the aloe. According to Hernandez the pith of the stem and the 'flesh' of the leaves were eaten.

[2] Some of the minor species, such as the *patimetl* and the *quetzalichtli*, produce an extremely delicate fibre, from which the finest thread was made.

[3] The Mexicans also possessed a natural paper in the internal membranes of the large cocoons made by caterpillars of the Bombyx genus. Extremely white and transparent, these membranes, which are formed in layers, easily detached from each other, can be used for writing without any preparation. The Mexicans made a substantial paper by pasting several of these layers together (Humboldt, Essai, vol. iii. p. 238). Besides the *amatl*, or aloe paper, which appears to have been used for paintings intended to be kept permanently, cloth of cotton and aloe fibre was employed for pictographs of temporary importance.

[4] Indigo, which furnished the most useful among the pigments, grew wild in the hot lowlands, but was not reduced to cultivation, as is sometimes stated. The collection of its leaves, in which the Spaniards, in later times, following the example of the aboriginal chiefs, compelled their Indian serfs to engage, was a laborious and unhealthy pursuit, and as such it was forbidden by law to employ the Indians in it (Leyes de Indias, Lib. VI, tit. 14, Ley 3).

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callan, where cotton could not be cultivated, the Indians were entirely dependent on this useful shrub for clothing material: and it is still largely cultivated for the purpose in Yucatan[1]. The most valuable among the aloes, however, were considered to be those which on reaching their maturity furnished fermentable juice. Twenty-two of these are enumerated, all of which may be included under the general denomination of the pulque aloe[2], because their sap, when fermented, forms the strong liquor above mentioned, called *octli* or pulque.

The pulque aloe.

After several years' growth the pulque aloe sends up from the midst of its leaves a lofty flowering stalk, for the nutriment of which the economy of the plant provides an increased supply of sap. This stalk having been cut out at its base, the sap is collected in the hollow, and when from time to time drawn off will again accumulate: and in this way the sap can be drawn off three times a day during several months until the plant has yielded some hogsheads of liquor[3]. This process closely resembles that employed in the Old World from time immemorial in making palm-wine from the date-palm. As the plant takes from eight to eighteen years to attain maturity, and is destroyed by thus draining it of its sap, large areas must be planted in order to ensure a regular supply. Plantations of these aloes were common adjuncts to the houses of Mexican chiefs[4]: and

[1] Among the miscellaneous uses of the metl it may be mentioned that the stem was used for roofing huts, which were thatched with the leaves, the roots were twisted into strong ropes, while the thorn-like extremities of the leaves afforded a supply of natural pins and needles. They also served as instruments of punishment for children, and especially for drawing blood as an offering to the gods, both from the worshippers and from animals (in Yucatan, according to De Landa, Relacion, § 28, from every animal in the country). The usual method was to pierce the ear with a metl-prickle, to receive the blood on the crimson stalk of the shrub *acxoyatl*, and to smear the face of the idol with it. These prickles and stalks were then deposited in the teopan, where they were stored in vast quantities, as perpetual memorials to the gods of blood-offerings duly rendered. For this purpose the dwarf *teometl* (metl of the gods) was preferred, on account of its extremely sharp prickles.

[2] About six species are considered to produce pulque of the first quality.

[3] According to Humboldt (Essai Politique, iii. 157) a very vigorous plant will yield in the course of four or five months 1100 litres of juice.

[4] Like the vine, the aloe yields the best liquor on volcanic soil. Its use was extended to the elevated Maya districts. In the hot lowlands the pulque aloe

the liquor in consequence became an object of traffic. On pretence of preserving it, but really for the purpose of increasing its intoxicating qualities, the juices of certain roots were added to it: a practice invented by the Indians, and continued in the time of the Spaniards, until it was forbidden by law[1]. A similar regulation probably existed in aboriginal times: and in some places even the preparation of pulque for sale would seem to have been prohibited. However this may be, the practice of pulque-drinking appears to have been generally discouraged[2]. When the Spaniards first entered Mexico, pulque was sold in the market, but was not openly consumed in the houses of the chiefs: and chocolate had taken its place as the beverage principally in use among men, while an infusion of the chian seed was the favourite drink of the women[3].

Reduction of the aloe to cultivation.

There is little doubt that the pulque aloe was first reduced to cultivation, probably by those early advanced occupants of the plateau of Anahuac who are usually known as the Toltecs; for the town of Tollan or Tula, the reputed centre of their domination, and from which their name is derived, is within the limit of aloe cultivation[4]. We know, besides, that while pulque was extensively used by the Toltecs, it was equally unknown to the Otomis and Totonacs, on the north of Anahuac, and to the Miztecs on the south; and it is certain that the best aloe plantations are still to be found in the districts

fails to yield a sufficient supply of sap to render its cultivation profitable. In the Maya of Yucatan, *ki* denotes alike the hemp aloe, the pulque aloe, and the pulque itself: *kiil*=drunkenness. The traffic in this vile intoxicant, which according to Mr. Tylor, tastes and smells like rotten eggs, is still the curse of Mexico. In appearance it resembles milk and water, or soapsuds.

[1] Leyes de Indias, Lib. VI, tit. 1, Ley 37.

[2] Ixtlilxochitl, Hist. of Chichimecs, vol. i. p. 135; Veytia, Hist. Ant. de Mejico, vol. iii. p. 226.

[3] The present importance of the pulque aloe may be estimated from the fact that in 1890 no less than 75,000 tons of pulque (of 1000 kilogs.) were carried on the main line of the Mexican Railway. This is nearly twice as much as the weight of any other commodity carried, and nearly one-fifth of the company's total 'goods traffic.' British capitalists, it appears, profit largely by the development of a pernicious traffic, which even the poor cannibals who formerly ruled Anahuac did their best to suppress.

[4] On the plateau of Mexico, according to Humboldt, the aloe is rarely cultivated north of Salamanca.

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of Toluca and Cholula, where the Toltecs are considered to have firmly established themselves. We are therefore compelled to reject the story told in the legend of Tecpancaltzin[1], the last but one of the Toltec chiefs, to the effect that pulque was first made by some worshippers of Tetzcatlipoca on Mount Popocani-tepetl, and that on its intoxicating properties being discovered it was resolved to use it to tempt this unpopular chieftain to his destruction. The same must be said of the parallel story, which attributes to the Toltec Papantzin, a contemporary of Tecpancaltzin, both the invention of pulque and the discovery of the method of making saccharine from the aloe juice. According to this account, Quetzalxochitl, the daughter of Papantzin, first presented these substances to Tecpancaltzin; she was thereupon secretly admitted to be one of his wives, and became the mother of Mecanetzin, otherwise Topiltzin, with whom the list of the Toltec chiefs terminates. The latter story appears to have been invented to explain the name Meconetzin (son of the aloe), obviously given to the last of the ruling Toltecs on account of his notorious drunkenness, and both legends are probably based upon Mexican songs of later date. The origin of the cultivation of the pulque aloe must be referred to a more remote period: that of the hemp aloe in Yucatan and other lowland districts is probably more recent. It may perhaps be ascribed to those Toltec invaders, to whom some investigators consider the principal architectural monuments of the southern provinces to be due. Cotton is at this day little cultivated in Yucatan, on account of the ravages of the cotton-worm. In order to secure a supply of clothing material, it would not be unnatural for the Toltec conquerors to set their Maya serfs to plant the hemp aloe, in imitation of the cultivation of the pulque aloe on the plateau of Anahuac.

Saccharines from the aloe and maize.

Among the sub-alimentary products of agriculture we have mentioned saccharines; products which have a double importance, being in request not only for their primary quality of sweetness to the taste, but as affording the basis of fermentable liquors. The primitive saccharine, honey,

[1] Veytia, Historia Antigua de Mejico, vol. i. p. 262.

is eagerly sought as an article of food by savages. The bee is indigenous to both worlds, though the various American species, inferior in size and in honey-making capacity to those of the other hemisphere, have never been reduced to captivity[1]. Wild honey formed part of the food of most of the tribes of South America: in Mexico it was most abundant in the province of Xalisco. The resemblance between the sweet substance which is the basis of honey and those which are the basis of fermentable juices cannot escape observation; and accordingly while a solution of honey was employed in making the fermented drink, called mead or hydromel[2], the principal fermentable juices, were employed in making various honey-like substances, produced by evaporating them over fire. The juices of the date-palm and grape were extensively employed in making a sort of artificial honey in those parts of the Old World where these products were most abundant[3]; and a precisely similar use was made in Mexico of the sap of the pulque aloe. By boiling the juice for a shorter period a thick, sweet beverage was made analogous to the inspissated must, in the manufacture of which the best grapes were so largely used in the ancient world. Aloe

[1] The hive-bee of America is of European introduction. The Mexican species described by Hernandez as exactly similar to the Spanish bee, and as building its combs in hollow trees, whence the Indians transferred them to hives, was no doubt the European bee in a feral state. The management of bees was unknown to the aborigines, apparently because the indigenous species are not hiveable. The editor of Hernandez (p. 334) considers the bees of the New World to be savages by comparison with the civilised bees of the Old (barbaras quoque et silvestres extare apes, veluti et inter homines ipsos, quos natura intellectus illustravit lumine, gentes incultas, et ab omni civilitate, et apte instituta republica prorsus alienas). Bees were probably first hived in ancient Egypt, where honey must have been in great demand for the purpose of embalming.

[2] Mead, according to De Landa, fortified with the heady juices of certain roots, was the principal intoxicant used in Yucatan; and drunkenness was very common. Probably the metl honey, obtained in the course of trade, like salt, cotton stuffs, and slaves, from the plateau of Anahuac, was largely used in making it.

[3] In Syria both the thick saccharine substances which were thus made from palm-wine and wine appear to have been called d'bhash (honey, Arab. *dibs*); so in Mexico the sweet extract of aloe juice was called *menecutli* (metl + necutli), aloe honey. This substance must have been a welcome substitute for the bitter and acid wild honey (*tlalnecutli*) of Mexico.

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honey and syrup were important articles of commerce in Mexico; and in recent times a white sugar, said to be not inferior in quality to that yielded by the sugar-cane, has been manufactured from aloe juice. Another saccharine, made from the sweet juice of the green maize stalk, before the development of the flowers, was sold side by side with aloe honey in the markets of Mexico [1]. Aloe honey was also made in Peru: and another saccharine was here made by evaporating an infusion of the red berries of the *schinus molle*, which was extensively used as a drink [2]. Like the honey of the bee, these substances were used with the flour of corn in compounding sweet bread or cakes [3].

The Cacao-tree.

When a tree is found to have been reduced to cultivation by a corn-growing people for the sake of the aromatic or oleaginous seeds contained in its fruit, these seeds being dried and pounded or ground in the same manner as corn, and mixed with the flour of corn when used as food, it may be concluded that its cultivation is posterior to that of the corn. This is the case with the cacao and chian, two trees indigenous to the hot lowlands of Southern Mexico and Central America. The date of their reduction to cultivation is uncertain: but the use of their produce in the pueblos of the plateau appears to date only from the conquests made by the Aztecs in these districts in the fifteenth century [4].

[1] Cortes, Carta Prima. From experiments which have been made in the United States it appears that the juice of the maize stalk is remarkably rich in saccharine, sometimes exceeding the quantity obtained from the ordinary sugar-cane; the maize sugar, moreover, is more easily prepared than that of the cane, and the juice is ready for use in from seventy to ninety days after planting, while the sugar-cane requires eighteen months. The juice of the green maize was sometimes used in making a fermented drink (Torquemada, vol. ii. p. 101).

[2] Garcilasso de la Vega, Lib. viii, ch. 12. The Canadian Indians made a similar syrup by boiling down the sap of the maple. No saccharine was ever reduced to the crystalline state by the aborigines.

[3] The use and manufacture of vinegar, it should be added, were well known to the aborigines, who made it from most of their sweet drinks. The favourite Mexican recipe for making it was to dilute menecutli with water and expose the solution to the sun for nine days.

[4] Cacao does not appear among the sacrifices of the people of Anahuac: but among the Mayas the *cacahuacentli* was ceremoniously presented to the guardians of the gods at the annual sacrifices made by the owners of chocolate plantations in the (conventional) month Muan (about April 22, when the plant was sown). Among the sacrifices was a dog with a chocolate-coloured patch (De Landa, Relacion, § xl).

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Though the cacao-tree is indigenous to the hot districts of South America, and to the West Indian islands, as well as to Central America, its cultivation was in aboriginal times confined to the latter district and to the hotter tracts of Mexico: and its Mexican name, partly borrowed from the Maya[1] language, indicates that the Mexicans adopted its use from the Central Americans. The fruit itself, together with its rind, which has an agreeable flavour, was probably first eaten[2]. The ripe seed which is still universally known by its Maya name *cacau*, appears to have been first used as an ingredient in the preparation of cooked maize, for which purpose it is well adapted by its strong aroma and fatty nature: dried and pounded, and mixed with maize into a paste, and sometimes seasoned with chilli pepper, it was long employed as a substantial article of food[3]. Most commonly, however, the compound of maize and cacao was diluted with hot water, and churned into a thick froth, which was poured off, as it was produced, into smaller vessels, and drunk, or rather eaten with a spoon, when cold[4]: sometimes other seeds were substituted

[1] *Cacahuac* (Maya) = the plant that produces double leaves (*cacah* = in pairs): *quahuitl* (Mex.) = a tree. Hence the Mexican *cacahuaquahuitl* = the cacao tree. The Mexican name for the bean, *cacahuatl*, is the Maya word *cacau* with the Mexican objective termination *atl*: the same name was applied to the beans when compounded with other ingredients as a food, or diluted as a beverage, whence the Spanish corruption 'chocolate.' The fruit was called *cacahuacentli*. *Cacahuatal* is the Spanish name for a cacao plantation. A traditional etymology of the fictitious word *chocolatl* is thus given by Brasseur de Bourbourg (Hist. des Nat. Civilisées, vol. iii. p. 643); '*Choca*, gémir ou pleurer; *atl*, eau; c'est-a-dire, l'eau qui gémit, à cause du murmure qui fait le moulinet en le tournant.' (The true form would be *choquilyani* + *atl*, or *choquilyatl*: *chocolatl* is not a Mexican word, nor could it be formed from *chocani* + *atl*.) This ingenious etymology, which is given by the English traveller, Gage (1648), is due to someone not perfectly conversant with the Mexican language. The analogous compounds of *atl* are not made with verbs, but with nouns, e.g. *nequatl* (necutli + atl) = mead: *nexatl* (nextli + atl) = lye: *tlalatl* (tlalli + atl) = mud. Nor is *choquilyatl* found as the Mexican term: the word is *cacahuatl*, which was applied to the bean, and to its solid compounds as well as to the beverage.

[2] Torquemada, vol. ii. p. 620: 'Comese verde, y tiene buen sabor el ollejuelo que le cabre, antes que enjugue; tambien se come seco,' &c.

[3] Acosta, Lib. iv. ch. 22.

[4] Chocolate was always taken cold by the aborigines: the practice of drinking it hot was introduced by the Spaniards. It was long argued that to

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for or added to the maize, and vanilla was usually added as a condiment[1]. Chocolate was considered to be a powerful nervous stimulant[2]: and its use was forbidden to the women of the warrior class, who drank in its place an infusion of the chian seed. Cacao owes its introduction into general use no less to its aroma than to its fatty constituents: for in Central America and Mexico, owing to the absence of the large domesticated animals, there was a deficiency in carbonaceous food, which cacao butter is to some extent qualified to supply[3]. From the tribes of the lowlands its use became known to those of the highlands, to whom it had at the time of the conquest become indispensable: to secure a constant supply of cacao seems in fact to have been among the principal motives for the extension of their domination over the warm tracts of the lowlands. The tribes conquered by the confederated pueblos of the Mexican lake were bound not only to furnish prescribed quantities at stated times by way of tribute, but to cultivate large plantations, newly laid out, for the sole

take chocolate was a breach of the Christian fast (Leon Pinelo, Question del Chocolate, Madrid, 1636): the contrary, however, was held by authority, and it was declared that priests might take chocolate before celebrating mass; but the cigarette which usually accompanied it was strictly prohibited, the American Councils having forbidden all priests to take tobacco, whether by chewing, smoking or snuffing, before the sacrament. (Concil. Limense III, Act. 3, cap. 24: Concil. Mexican., Lib. iii. tit. 15, § 13).

[1] Vanilla (*tlilxochitl* = black flower) was found in abundance in the wild state, and was easily propagated by planting a cutting at the foot of some tree unencumbered by other creeping plants.

[2] Bernal Diaz (chap. xci), who is confirmed by Hernandez (Rer. Med. Nov. Hisp. Thesaurus, p. 81), describes it as an aphrodisiac: a quality which must have been largely due to the added ingredients, though to some extent attributable to the large proportion of fat contained in the seeds. Moleschott (Phys. der Nahrungsmittel, 2nd ed. p. 426) says the Mexicans still make a heating mixture (eine sehr erhitzende mischung) by adding chilli pepper, cardamoms, cloves, and vanilla, to the compound of maize and cacao.

[3] The cacao bean, according to Moleschott, contains 48 per cent. of fat, much of which is removed in the modern processes of preparation. Until the screw-press was used to remove the fat, and the practice of adding a large proportion of sugar was introduced, chocolate must have been at best a nauseous compound. The old Italian traveller Benzoni (1542–1556), who met with it in Nicaragua, describes it as a drink more fit for pigs than human beings ('porcorum verius colluvies quam hominum potio,' tr. Chauveton, p. 229). Linnæus, however, named cacao 'Theobroma' or food of the gods, whence the name of its alkaloid, 'theobromine,' analogous to theine and caffeine.

use of the conquering tribes[1]. The cacao consumed in Tezcuco is said to have amounted to more than half the quantity of maize consumed in that pueblo: and one of the cacao storehouses of Montezuma, at the Spanish conquest, contained 40,000 loads of the bean, packed in large bales, made of plaited osiers, which required six men to lift them[2]. By long cultivation the cacao-tree had developed a larger seed, richer both in fat and in aromatic qualities, than that of the wild shrub[3]. Cacao beans were stored in large quantities by the people of the plateau, and were generally used, as they are to a limited extent to this day, as a medium of exchange[4].

Historical importance of the Cacao-tree.

The old naturalist, to whose industry the student of early Mexican economy is so much indebted, had the last-named fact in mind when he wrote, borrowing a well-known phrase of Pliny, that great changes in human life were revealed in the cacao-tree (in cacahuaquahuitl magna deteguntur humanae

[1] Ixtlilxochitl, Hist. of Chichimecs, vol. i. p. 281. The cultivation of the cacao tree involved an unusual amount of labour, as in forming a plantation two other shrubs (*cacahuanantli* = mother of cacao) usually the beautiful large-leaved flowering shrub called *atlinam*, had to be first planted to protect each young plant from excessive heat. This practice appears to be necessary in exposed situations: sometimes it is sufficient to plant a row of manioc plants on each side of the young cacao tree. In Nicaragua shade is provided by means of the plantain and the Erythrina. In the most favourable situations no such protection is necessary. The stunted mezquite or algarroba, which abounds in the arid tracts of the New World, was believed by the Mexicans to have been originally the cacao tree, changed to its present form by the wizard Quetzal-coatl (the sun). For purposes of tribute and commerce the cacao beans were made up in bags, each containing 8000 beans (Mex. *xiquipilli*, Maya *hun-pic*). Three of these made up the 'load' as mentioned in the text.

[2] Torquemada, vol. i. p. 472.

[3] Humboldt, Essai Politique, vol. iii. p. 195.

[4] The seeds of the dwarf cacao (*tlalcacahuatl*) were chiefly used for this purpose, because of their uniformly low value. The seeds of the larger varieties were of higher value, which varied according to their size and quality. The largest cultivated species, according to Hernandez, was called *quauhcacahuatl* (tree-cacao): another of less size, *mecacacahuatl* (rope-cacao): another, intermediate between this and the smallest variety, *xochicacahuatl* (flower-cacao). This classification, however, is not based on essential differences. Any trees allowed to grow to their natural height, instead of being periodically cut down with the knife (the usual practice) would be called *quauhcacahuatl*: any planted in regular plantations, laid out by line, *mecacahuatl* (the regular plantations of the hemp aloe in Yucatan are for this reason still called mecates); and any which produced flowers larger or more brilliant than the usual small pale-red blossom, *xochicacahuatl*.

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sortis volumina)[1]. This will scarcely be thought an exaggeration when it is considered how greatly both commerce and production are promoted by the presence of an abundant and convenient medium of exchange. As in the Old World, before coinage was known, so in the New at the time of the Discovery, such commerce as took place was based upon the exchange of commodities. In the advanced districts of America the chief standards of exchange were cotton and woollen cloths, the bright plumage of birds, the green jade and other precious stones, and slaves. To these were added, in the districts where the use of cacao had become general, cacao beans; a medium of exchange which offered many advantages over the rest. An alimentary or sub-alimentary product in general use, having a steady value, and this value considerably greater, bulk for bulk, than the staple food, capable of being stored for a considerable period, and easy of estimation as to quantity, is obviously a convenient currency. Narcotics, which are mere luxuries, such as tobacco, opium, and coca, have always been and still are, largely used for this purpose[2]. A similar use of strictly alimentary products is less common, and probably only takes place under special circumstances. Almonds are, or were recently, used as a medium of exchange in Gujerat: a nearer parallel to the use of the cacao bean in Mexico is found in an important commercial district of the Soudan, where gold, cotton cloths, and shells had at the time of Barth's visit in 1850 been superseded as standards of value by negro millet, a corn much more highly prized than maize, the staple food of the district[3]. The development of commerce in Mexico, though greatly favoured, as will be presently shown, by geographical conditions, must have been largely due to the use of the cacao bean as a medium of exchange.

Cacao the first object of special tropical agriculture.

During nearly two hundred years, reckoning from the Discovery, America was chiefly valuable to Europe as a source of supply of the precious metals and of some other

[1] Rer. Med. Nov. Hisp. Thesaurus, p. 79.

[2] So tobacco was formerly the standard of exchange in the West Indies and Virginia, and is still in some parts of Africa (the upper Niger, &c.). Opium is still used in Hankow, and coca in Peru.

[3] Barth, Travels, ch. xviii. Compare ante, p. 313.

natural products, and as a plantation ground for such agricultural products as can only be grown in hot climates. The chief of these were cacao, cotton, tobacco, indigo, and cane-sugar, to which at a later period was added coffee. Cane-sugar and coffee were introduced from the Old World[1]: indigo, as has already been shown, was at the time of the Discovery only collected in the wild form, and tobacco, though to some extent in cultivation, cannot, for a reason which will presently be adduced, be considered as possessing any economical importance. Cotton was already cultivated in the Old World to an extent sufficient to supply the existing demand, and nearly three centuries elapsed before the American cotton supply acquired economical importance. But cacao, as has been shown, was already largely cultivated by the aborigines at the time of the Discovery; the bean was at once introduced into Europe, where a demand for it speedily arose, and its cultivation was taken up by the Spanish colonists of the mainland, whose example was followed by the English and French in the West Indies. The tropical agriculture of Europeans in the New World, from which Europe has drawn vast stores of wealth, thus appears to have grown by a simple process of extension, out of the cultivation of the cacao-tree by the aborigines in Mexico, Guatemala, and Nicaragua. Cacao usually, though not universally, preceded other objects of tropical agriculture in the West Indian Islands, the reason being that as compared with sugar and tobacco it required little expenditure of either capital or labour[2]. From cacao, as they became richer, the planters turned to the more profitable culture of sugar, tobacco, and indigo; and hence the cultivation of this earliest special product

[1] The sugar-cane was introduced into Española early in the sixteenth century by Atiença and Velosa. Coffee culture was introduced into the New World by the Dutch in Guiana about 1720.

[2] Blome, in 1672, when cacao was the principal object of cultivation in Jamaica (where the excellence of the wild cacao in the interior districts had led to its cultivation before the English conquest), estimated that three negroes with their wives and four white labourers were a sufficient staff of labourers for a cacao-'walk' of 500 or 600 acres. At this date the cultivation of the sugar-cane had scarcely begun. In 1687, however, there were as many plantations of sugar as of cacao (nearly 100 of each), and the number was fast increasing.

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of tropical agriculture in the New World tended to diminish where European capital was abundant, and to become more and more restricted to the districts where it had originated.

Cacao, Coffee, and Tea.

The substitution of chocolate for octli and chicha, which was already in progress in Mexico and Central America, led ultimately in Europe to an important economical change which had already taken effect to a large extent in certain advanced communities in Asia. Tea in China, and coffee in Arabia and the neighbouring countries, had already largely displaced the intoxicating beverages previously in general use. The beginning of the corresponding movement in Europe dates from the introduction of chocolate into Spain and Italy. Owing to the state of international relations, the cacao of Spanish America was less easily procured than the corresponding products of the East; coffee and tea, moreover, were more easily prepared, required no admixture of other ingredients, and proved better suited than chocolate to the taste of the people of Northern Europe. The last-named beverage, nevertheless, has held its ground. Its fine aromatic quality, its cheapness, the comparatively mild stimulus which it communicates to the nervous system, and the positive alimentary properties which it largely possesses, render it in the present day of increasing importance; and the cacao-tree may fairly be assigned a rank with maize, manioc, potatoes, and tobacco, among the chief benefits which the discovery of America has conferred on the world at large[1].

The Chian plant.

The last economical plant of the Mexican group, the chian, the cultivation of which, like that of the aloe and cacao, was peculiar to Southern Mexico and Central America, is indigenous, like the cacao, to the hot districts bordering on the Mexican gulf, and has given its name to the state of Chiapas[2]. The pounded seeds of the chian,

[1] Mention ought here to be made of the so-called 'Paraguay tea,' made from the leaf of the Ilex Paraguariensis. This beverage, locally called *mathé* (the Quichua name of the gourd cup in which it is prepared), does not appear to have been known to the aborigines, and is probably an invention of the Jesuit missionaries. The tree is not cultivated; but the leaf is now the object of an extensive commerce, the right to take the leaves being sold by the proprietors.

[2] Chianpan = 'Land of the chian,' became in Spanish Chiapa, pl. Chiapas.

like maize, appear to have been originally used as a food, and subsequently as the material for a beverage. 'Chian' is the Maya word *chihdan*, strong or strength-giving. A bag of the flour of maize and chian, to which, when cooked, a little aloe honey was added, formed the usual provision of the Mexican warrior on a campaign; and this food was considered sufficient to enable him to support protracted fatigue.

The oil chian.

One variety of the plant was chiefly cultivated for the sake of the oil yielded by the seed [1]. The cultivation of chian, and the preparation of the oil, which resembles that procured from linseed, occupied a considerable amount of female labour: and the importance which was attached to it may be estimated from the prominent place occupied by the chian seed, together with maize, pulse, huauhtli, chilli, cotton, and cacao, in the lists of the tributes furnished to the confederated pueblos from the coast districts. An infusion of the chian seed was the usual drink of the women in the families of chiefs, in the place of chocolate. Besides being used in cookery, and as an unguent for the skin, chian oil served for the application of the warrior's war-paint, and as the medium by which the paintings of Mexico and Central America were executed: but the economical importance of the chian declined after the conquest, and it is now cultivated, if at all, chiefly as an ornamental plant [2].

The Cocoa-tree.

The list of plants having an economical value which were reduced to cultivation by the aborigines ends with the coca-tree, the leaves of which were employed in Peru and New Granada for the sake of their stimulating effect on the nerves. Coca, like opium, was used

[1] The oil chian had a small black seed: that used for food purposes had a larger one of whitish colour.

[2] In Humboldt's exhaustive economical work on Mexico the chian plant is not even mentioned. The plant is described as a singularly beautiful one, having a quadrangular stem, from which the branches extend symmetrically in each direction, bearing blue flowers (Clavigero, Storia di Messico, Lib. i). Clavigero attempted, but without success, to acclimatise the chian in Italy, in order that its fine oil might be rendered available for the use of artists. The name appears to have been also applied to a small plant of a different species (Rer. Med. Nov. Hisp. Thesaurus, p. 234.)

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as a medicine before it was taken as a luxury; and in this, as well as in its general properties and its economical relations, it resembles the more widely-disseminated plant which the Indians of Cuba called *tabaco*[1]. Tobacco, which occupies so important a place in the economical development of the New World after the discovery, was known to most of the aboriginal tribes, from Canada to Peru, but nowhere does it seem to have been cultivated as a crop for storage. Frequently, no doubt, the supplies of the wild plant were supplemented by scattering the seeds in the neighbourhood of the village, as is still done by some Californian tribes who are strangers to the regular practice of agriculture. In Mexico it was probably cultivated as a garden plant, the leaves being plucked from time to time when required for use[2]: but it was nowhere grown as a crop by organized labour, and consequently never appears in the lists of tributes. The reason appears to be that the aborigines were ignorant of the method of curing the leaf for storage and transportation. Tobacco was originally employed for medicinal purposes: and at the time of the Discovery the aborigines universally regarded it as a panacea. Probably it was first taken internally as an antidote to poison, especially by snake-bite, for which purpose animals instinctively have recourse to it[3], and as an anodyne: the expressed juice and the leaves, either freshly bruised, or dried and pulverised, were applied to ulcers, wounds, and contusions[4]. Taken copiously in the

[1] Las Casas, Hist. de las Indias, Lib. i. ch. 46. See ante, p. 139, note 1. The name *tabaco* is usually said to be Haytian; the Haytian name, however, was *cohoba* (Las Casas, Apologetica Historia, ch. 166; Gomara, Hist. de las Indias, ch. 28; Peter Martyr, De Orbe Novo Dec. I. cap. 9).

[2] This is rendered probable from the occurrence of the term *quauhyetl* (wild tobacco), and the fact that two varieties were recognised, the smaller of which (*picilyetl*) was most common. Tobacco, moreover, was to some extent used in Mexico as a sacrifice, a circumstance decidedly in favour of cultivation. In Eastern North America, from Virginia to the lakes, tobacco was in use to an extent which could have only been rendered possible by regular cultivation. Here, also, it appears prominently as a sacrifice (see subsequent note).

[3] Caulin, Hist. de la Nueva Andalucia, Lib. i. cap. 4.

[4] Hence the early name *herba vulneraria*. Tobacco, says Hernandez, 'jure Panacea Americana nominari potest' (Thesaurus, p. 176).

form of snuff[1], it produced an intoxicating effect, and was generally employed by the shamans to induce the partial stupefaction which was considered necessary to the exercise of their functions. The practice of smoking the dried leaf, now common to the highest civilisation and the lowest savagery, the luxury alike of the most intellectual and of the most brutish of human beings, certainly originated in the practice of burning it as a sacrifice to the gods and spirits[2], and was generally resorted to for medicinal purposes: often, as in Mexico, the dried leaves were smoked, with the addition of other herbs, and of fragrant gums, after taking food. It was smoked both in pipes and in the form of cigars[3], the latter being sometimes of enormous size; the practice of snuffing was also very generally in use. Tobacco appears to have been largely used by the hunting tribes of the forest districts, both as a luxury and for the purpose of assisting them to bear the prolonged fatigue of hunting expeditions with a less quantity of nourishment. It was equally prized by the toiling porter of Mexico, the sole animal of burden in the most advanced districts of the New World. The mastication of the coca leaf served precisely the

[1] See the description of the double snuffing-tube in Las Casas, Apologetica Historia, ch. 166.

[2] Traces of this occur in Mexico; but the best instance is found in Virginia. 'This *Uppowoc* (tobacco) is of so precious estimation amongst them, that they think their gods are marvellously delighted therewith; whereupon sometime they make hallowed fires, and cast some of the powder therein for a sacrifice. Being a storm upon the waters, to pacify their gods, they cast some into the air and into the water. So a wear for fish being newly set up, they cast some therein and into the air; also after an escape of danger, they cast some into the air likewise; but all done with strange gestures, stamping, sometime dancing, clapping of hands, holding up of hands, and staring up into the heavens, uttering therewithal and chattering strange words and noises.' Heriot, Brief and True Report (1587), part 2. So among the Caribs, Araucans, Paraguayans, &c.

[3] The common Indian pipe consisted of a small bowl of pottery or soft stone, having a socket for the insertion of the internodal hollow part of a reed, through which the smoke was inhaled. Originally the dried tobacco was stuffed into the reed, and thus smoked. The dried and broken leaf was kept burning in the bowl by means of a brand from the fire. Plain bowls, nearly resembling the modern plain meerschaum bowl, are found in great numbers in Mexico and Eastern North America; often, however, the bowl is ingeniously carved in the figure of an animal. The cigars were usually small cylindrical rolls: the larger ones mentioned in the text, fixed for convenience of smoking in a carved forked stick, such as are still handed round at festivals among the tribes of the Amazon river (Wallace, ch. x), appear to have been in use for ceremonial purposes.

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same purpose in the Peruvian montaña[1]: and its use had become so general in the high sierra, where it relieves the physiological effect of the rarefied air, that it may be fairly ranked among the necessaries of life[2]. It was used, though less generally, in New Granada: in both districts it was dried in the sun and packed in baskets for storage and transport. After the conquest its cultivation in Peru was extended, chiefly owing to the growth of population in elevated mining districts such as Potosi, where it was in large and constant demand. Coca is now in daily use by eight millions of people: and it had a corresponding importance in the time of the Incas. Like the cacao bean in Mexico, the coca leaf served before the conquest as a medium of exchange. It thrives best, and is now chiefly cultivated, at between 5000 and 6000 feet above the sea-level: but it seems formerly to have been grown at greater elevations. The application of the name coca, which is the common Aymara word for a tree, to the shrub in question, denotes that the people of the Collao considered it 'the tree' by excellence[3]: and if we may accept the statement of an usually accurate authority[4], to the effect that the wild coca of the Cuzco district was formerly considered to be the best of any, we have a fact which, taken together with the supreme excellence of the Cuzco maize, sufficiently explains the selection of that district for occupation by the Inca colonists. The coca-tree was always planted on

[1] In Mexico tobacco was masticated, precisely as coca was and still is in Peru, with the addition of a powder made of calcined shells. Sometimes in Peru, when a strong dose was required, coca and tobacco were used together. 'Quando se quieren emborachar, o estar a'go fuera de juyzio, mezclan con la coca hojas de tabaco, y chupan lo todo junto, y andan como fuera de si como un hombre borracho, que es cosa que les da grande contentamiento estar de aquella manera.' Monardes, Historia Medicinal, ed. 1574, p. 115.

[2] Originally coca was the luxury of the Incas and chieftains; but its use was ultimately extended to the warriors generally, and it seems to have been within the reach of the peasantry, though probably less extensively than at present.

[3] Similarly in Central Africa, tobacco is called 'êl werqah'=the leaf.

[4] Juan and Ulloa, Voyage to South America, Book VI. ch. 3. It will be remembered that although Cuzco itself is 11,380 feet above the sea, the warm valleys in the neighbourhood have a much less elevation. Coca is still exported from the department of Cuzco; and according to Blas Valera (Garcilasso, Lib. VIII. ch. 15) the revenues of the Bishop and Canons of Cuzco were in his time chiefly derived from the tithes of coca.

terraces: its cultivation on level ground is a modern innovation[1]. Like tobacco in Virginia and elsewhere, coca was very largely used as a sacrifice to the gods and spirits, a practice which long survived the conquest, as appears from the enactments interdicting it which occur in the Spanish Laws of the Indies[2].

Agriculture and religion: spirits.

The facts just mentioned prepare us to consider cereal agriculture in another aspect. Among the changes to which artificial food-production gives rise, one of the most important in its bearings on the organisation of society is the modification which it produces in the religious ideas of tribes which pursue it. The lowest savages not only have no gods, but do not even recognise those lower beings, usually called spirits, the conception of which has invariably preceded that of gods in the human mind: as a Jesuit missionary acutely observed of the peninsular Californians, they are freethinkers and materialists[3]. It is a mark of advancement when man figures to himself living beings other than the familiar ones which surround him, and attributes to the action of these creatures of his imagination whatever in the material world he is unable otherwise to explain. But man has not yet arrived at the conception of gods[4]: these imaginary agents, who naturally become the objects of his fear, and at length of his veneration, are spirits, or, to be precise, invisible beings[5]; and he seeks to

[1] Markham, Peruvian Bark, p. 148.

[2] Leyes de Indias, Lib. vi. tit. 14, ley 1.

[3] Bägert, Nachrichten von Californien, p. 169.

[4] A god may for purposes of ethnology be defined as a benevolent spirit, permanently embodied in some tangible form, usually an image, and to whom food, drink, and miscellaneous articles of human use are regularly offered for the purpose of securing assistance in the affairs of life. It is scarcely correct to speak of gods and spirits as 'supernatural' beings: as conceived by early man, they belong to nature equally with man himself.

[5] Unsatisfactory as is the word 'spirits,' it seems impossible to replace it by a better, and it is consecrated by the usage of over sixteen centuries. The evil spirits which are still to some extent believed in are precisely the 'spiritus nocentes' of Prudentius (Hymn. ad Incens. Cerei Pasch. v. 125.):—

'Sunt et spiritibus saepe nocentibus
Poenarum celebres sub Styge feriae,' &c.

The word is the translation of πνεῦμα, borrowed in this sense by the Greek Jews and early Christians from the Alexandrine philosophers, who adopted it from the Eleatics. In speaking of spirits as believed in by primitive peoples it

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control their action by rites which are magical rather than sacrificial or propitiatory. Originally they are dealt with by mere physical force. Thus the Guaycurus of Paraguay considered unusually heavy storms as attacks on them by the evil spirits, and sallied forth in a body, brandishing their clubs and shouting the war cry, for the purpose of repulsing them [1]. Similarly the *hapiñuñu* or 'bosom-clutching' spirits [2], who were believed to have been the original occupants of the Peruvian valleys, were forcibly expelled by the early human inhabitants, who were immigrants from the country of the Guaycurus. When the ancestors of the Incas arrived in the sierra 'from beyond Potosi,' that is, from the Gran Chaco, these spirits, according to a fragment of an ancient song, which has been preserved by an Indian writer, disappeared with terrible cries, saying,

'We are conquered! we are conquered:
Alas! for I lose my lands!'

Mountainous and desert tracts, unfit for habitation, are naturally assigned as the abode of the evil spirits [3]. The *hapiñuñu* took refuge in the snowy heights of the Andes, which they are still supposed to haunt. In after times they reappeared, stalking visibly over the land, and violently carrying off men, women, and children [4]. The

must be remembered that they are generally considered as substantial beings, not as the *vagae tenui sub imagine formae* of late stages of advancement.

[1] 'En ocasiones que hace grandes turbiones de agua y viento . . . todos grandes y pequeños salen de sus esteras ò toldos, armados de macanas, dando terribles vozes y gritos à pelear con la tempestad, persuadidos à que en ella vienen demonios, à quien aborrecen mucho: porque dicen vienen à acabar à los Guaycurus, y quieren defenderse de ellos, sin mostrarles cobardia.' Lozano, Desc. chorographica del Gran Chaco (1733), p. 71. So in Chile storms are ascribed to evil spirits. The parallelism with Babylonia, where the baleful spirits, who were identified with storm-clouds (cp. the Maruts of the Rig-Veda), were also considered to bring diseases, is noticeable.

[2] The name is no doubt derived from the difficulty of breathing, sometimes culminating in swoons, which is constantly experienced in crossing the elevated punas of Peru and Bolivia, and which was explained as a seizure by an evil spirit. Cp. note 3, p. 393, post.

[3] So, according to the old Canaanite demonology, as handed down among the Rabbins, the evil spirits 'inhabited, and were seen and conversed with in, deserts, but were never seen in towns and populous places; so that if any inhabitant of a town wished to sacrifice to them, it was necessary for him to withdraw from the town and go out into the woods and desert places.' Maimonides, Moreh Han-Nebhuchîm, Lib. iii. ch. 46 (Ed. Munk, vol. 3, p. 374).

[4] Relation de Salcamayhua (Tres Relaciones, p. 235).

obvious meaning of this is that they were the proximate causes of disease and death: and as late as the conquest, at the beginning of the rainy season, which was the signal for the recurrence of sickness, the evil spirits were annually driven out of Cuzco, over the original boundaries of the Inca dominion, to the four quarters of the earth, by bodies of armed warriors, in the festival of the Situa[1]. Similarly the Mayas of Yucatan were careful to chase away the evil spirits before performing sacrifices to the gods[2]. The conception of a spirit as a being composed, not of flesh and blood, but of some ethereal matter, is not fully established until the age of civilisation, and has no fixed or recognised place, although it sometimes intrudes, in the ideas of savage or barbarous man[3]. In these stages man for the most part remains a materialist. These imaginary beings are considered to be equally substantial with man himself. Thus in Australia the evil spirits, when conquered, are killed, cooked, and eaten: in Western Africa, the spirit who wanders through the forests, catching and killing travellers, is himself met and resisted by a body of men, who wound him with spears, and sometimes kill him, in which case his body must be burnt, even to the smallest bone[4]. It is the same, among the Esquimaux, with the malignant spirits who scare away birds and seals. Only the shamans or wizards have the faculty of seeing them; and they can only be seen with bandaged eyes. When caught, these game-scaring spirits are torn to pieces, or eaten[5].

[1] For other instances of forcible expulsion in the Pacific islands see Frazer's 'Golden Bough,' vol. ii. pp. 158–182: in Western Africa, Bosman, Desc. of Gold Coast, Letter X.

[2] Diego de Landa, Relacion, § 40.

[3] The primitive conception of spirits as substantial beings is considered to have been gradually modified by reasoning founded (1) on the observation of shadows, and of the 'breath,' or condensed vapour, which often appears to proceed from the mouth, and (2) on the phenomena of dreams and memory. The fact that the visible 'breath' is obviously caused by the heat of the expired air probably suggested the doctrine of early philosophy that spirits are composed of the element of fire.

[4] C. Staniland Wake, Chapters on Man, pp. 178, 179: compare Spencer, Principles of Sociology, §§ 92, 93.

[5] Crantz, Hist. of Greenland, Book III. ch. 5. In a later stage the evil

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The spirits, then, whom the savage believes to share the world with him, are considered to be substantial beings, consisting of flesh and blood like man himself; and like him nourished by food and drink. They are therefore not immortal: like man, they are liable to death by violence or starvation. They are also subject to that alternation of want and abundance which occupies so large a space in human experience. In this circumstance, coupled with the fact that some of these spirits are conceived as injurious or evil, others as benevolent or good, we have the key of primitive theology. Man seeks to keep the good or benevolent spirits alive, to satisfy their wants, and to give them pleasure, in the hope of interesting them by this means in the success of his own enterprises: and for this purpose he provides them with food and drink. Hunting peoples, who have no gods, occasionally sacrifice food to the spirits, in order to obtain success in the chase: thus the Veddah of Ceylon place on the ground offerings of blood and burnt flesh for the Vedde-Yakko (spirit of the chase), promising further offerings of the same kind when the game is caught. If the spirit accepts these offerings, he is understood to appear to them in dreams, telling them where to hunt [1]. Some low agricultural and cattle-keeping tribes, who have not attained the conception

spirits when caught are not destroyed, but are put under corporal restraint. Thus in the ancient Babylonian poem of the seven evil spirits (tr. Sayce, Bagster's Records of the Past, vol. ix. p. 145) the Fire-god is directed to seize them and 'bind their bodies.' In the well-known romance of Tobit the evil spirit flees to the uttermost parts of Egypt, where he is overtaken and bound. Solomon's treatise concerning spirits is said to have contained directions for catching and securing them (Fabricius, Cod. Pseudep. Vet. Test. vol. i. p. 1043): he was also considered to have succeeded in making them cut wood and carry burdens.

[1] Bailey, Tr. Ethnological Society, N.S., vol. ii. pp. 302, 303. That hunting peoples have no gods, though true generally, is not so universally. The Voguls of Siberia, a purely hunting people, had true gods in stone and wood, with eyes formed of lead or coral, the principal among them having huts assigned to them, closely adjoining the hut of some wealthy member of the tribe, while others were placed in caves, or on steep rocks or tall pines. Animals were sacrificed to them before hunting expeditions were undertaken (Pallas, Voyages, ed. Par. 1789, vol. ii. p. 370). The chief god had the figure of an elk, the chief game of the Voguls. The Algonquins, before hunting, worshipped the spirit of the bear, but do not appear to have thus embodied it.

of gods, place pieces of manioc-root and ears of maize on branches of trees, to propitiate the spirits[1]. These sacrifices of the Veddah illustrate in its simplest form the principle which lies at the root of all. The spirits for whom they are intended are beings of animal nature, chiefly differing from other animals in that they are naturally invisible, but have the power of assuming various forms, and of moving swiftly through the air from place to place. Air, perhaps, rather than earth, is conceived to be their proper element: it is at any rate certain that food-offerings, in order to reach them, must be committed to the air. There are only two methods of doing this, libation and combustion: the former adapted to liquids, the latter to solids. Liquids are poured on the ground, on a stone, or into a bowl or other receptacle, and pass into the air by simple evaporation. Solids are burnt, and pass into the air in the form of smoke. In offering to the spirits food in the form of blood, the Veddah follows the universal logic of primitive savagery. Man once consumed his game warm and raw. Fatigued with the chase, emaciated, perhaps, by previous fasting, the savage slays his victim, drinks of the hot blood, feels himself at once invigorated, and makes his meal upon its flesh at leisure[2]. The rest of the blood, spilt on the ground, quickly dries up. The savage, who has but one solution for most physical phenomena, concludes that the spirits have drunk it. Blood, therefore, is their natural food[3]. In this, repugnant as it is to modern prejudices, the savage sees nothing revolting or unnatural. Blood, which is in truth only the material of flesh, is to him a perfectly natural food; scarcely less so, perhaps, than milk, which is nothing but blood filtered through a gland. Henceforth, a part of the blood of all animals that man slays, wild or domestic, will

[1] Livingstone, Travels and Researches, ch. xvii.

[2] This practice survived in the last century in Europe. 'Even at this day those people who hunt wild goats and chamois upon the Alps always drink the blood of the beasts as soon as they are killed. Having asked them the reason of this practice, they told me nothing was so strengthening as blood drunk hot.' De Goguet, Origin of Laws, &c., Book ii. art. 3.

[3] Blood, in which, according to primitive physiology, the life of animals is inherent, is considered to be regularly absorbed by the spirits for their

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be poured out for the spirits, or for the gods who succeed them[1]. Ultimately, when man abandons the practice, once universal, of feeding on blood, all the blood of a slaughtered animal is poured out as the share of the invisible powers[2]. Sometimes, in a later stage, when sacrifice is more fully developed, clotted blood is collected when the carcase is cold, and wrapped in a cloth; this is placed in a basket and suspended in the air. Such was the practice of the advanced Indians of Nicaragua, between the lake and the ocean, emigrants from Mexico, when sacrificing, after the chase, to the *teomazat* and *teotoste*, or gods of the deer and rabbit respectively[3]. It is equally in accordance with primitive logic to offer to the spirits

sustenance. If the blood of other animals be not furnished them, they will have that of living human beings: the pale, bloodless condition of disease is universally considered to be produced by their attacks. The dreaded *cauchu*, or blood-sucking vampire of the Peruvian coast valleys (Quich. *runap-micuc*) was a fever, unknown in the healthy sierra (Arriaga, p. 21). Epilepsy, in particular, is the periodical attack of a blood-sucking spirit. Pliny records that in his time the lips of epileptics were smeared with human blood as a prophylactic; some were brought into the arena to suck the wounds of dying gladiators. It is not only in Homer that the pale ghost must be fed with blood before he prophesies: we know from Plutarch's life of Aristides that in his time blood-sacrifices were annually made to the ghosts of those who fell at the battle of Plataea. A steer was slain, the blood was collected in a hole or trench, and the deceased heroes were summoned ἐπὶ τὸ δεῖπνον καὶ τὴν αἱμακουρίαν (cp. Pind. Ol. 1. 90). The strict prohibition of the eating of blood, and of the eating flesh 'by' or 'over against' the blood (עַל־הַדָּם, auprès du sang, Levit. xix. 26), in the law of Moses, are understood to represent the reaction against blood-sacrifices to spirits and gods customary in Canaan or Babylonia.

[1] It seems clear from Levit. xvii. 13, that Canaanite (or perhaps Babylonian) hunters poured the blood of slaughtered game on the ground as an offering to the spirits. In order to check or prevent a similar practice the Israelite and the sojourner are there required to cover with earth the blood of all creatures slain in the chase, whether quadrupeds or birds.

[2] The ritual of blood-sacrifice is most advantageously studied in the law of Moses, a digest which, like most others, incorporates much that is extremely primitive. The practice of smearing the lintel and door-posts with the blood of the first kid or lamb, as an offering to the evil spirit (mashekhith) who might otherwise enter and destroy human life, but who therefore 'passes over' (pâsakh), is obviously much older than the incidents with which it stands connected in the narrative. A similar practice is observed to this day in Peru. When the *tampu* or hut is cleansed and whitewashed, llama's blood is always sprinkled on the doorway and internal walls to keep out the evil spirit (Col. G. E. Church).

[3] Oviedo, Hist. de Nicaragua, cap. iii. *Mazat* and *toste* are the Mexican *mazatl* and *tochtli* in archaic forms.

a portion of the flesh. The invisible powers must have their share of all that man delights in: at a later period offerings are made them of fermented liquors, narcotics, perfumes, and the material of clothing and ornaments. From the solid parts of the slain animal those are selected which are most easily volatilised. A portion of the fat, ultimately all the fat which adheres to the internal organs of the slain animal, is therefore burnt, and reaches the nostrils of the spirits in the form of a grateful savour. At a later period, when man depends for flesh food on domesticated animals, such offerings are reserved for gods of the first rank: and hence in Peru the chief deities, who alone were thus honoured, obtained the distinctive name of *huira-cocha* (fat sacrifices).

Images of the gods—Idols.

The spirit, however, by hypothesis, is usually invisible. In order that he may duly receive these offerings, an image of wood, clay, or stone, modelled after the form which he has assumed when seen in dreams, is made to represent him[1]. Such an image is understood to attract his attention: if it does not, it is no fault of the worshipper. It serves another purpose, that of scaring away spirits for whom the sacrifice is not intended. For it is observed that when the blood is poured out, when the fat is burnt, absorption into the air never fails to take place. The spirits are ever at hand; when man offers a sacrifice, they buzz around it like flies[2]: the image therefore serves to warn off possible interlopers. A benevolent spirit, thus visibly embodied, and regularly fed with meat and drink offerings, is what is commonly called a god. At a later stage, as will appear in the sequel, a living man, who actually consumes the offerings made to the god whom he repre-

[1] Anthropomorphous gods, by no means universal, always indicate a certain degree of advancement in peoples who make them. In Africa, where the poverty of man's moral and intellectual endowment contrasts so strikingly with the wealth of material resources which he enjoys, they are rare, and seldom better than hideous little portable dolls. The most advanced Africans are content to embody their gods, or rather great spirits, in symbolic objects, which serve the purpose served by images elsewhere. The idea of establishing the gods as important members of the community, essential to those forms of advancement which lead to civilisation, is unknown to the black race.

[2] Sacrifice of Hasisadra, Smith, Hist. of Babylonia, p. 46.

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sents, is sometimes substituted for this material image. But in general an inanimate representative is considered to be sufficient. As a further means of attracting the god's attention, the image is richly dressed and decked with ornaments, in the hope that the god may enter into it from time to time for the purpose of fully enjoying the honours thus prepared for him. Migratory families and peoples have portable gods: the gods of tribes which have become stationary through the practice of agriculture become stationary also. In this case the god is ultimately established as a member of the community by assigning him a piece of land and building him a dwelling: sometimes several gods are installed in a single house. In early stages, these apartments in which the gods are lodged often appear as appendages to the houses of the chiefs: usually they are placed at the entrance, forming a species of portico. This practice seems to be a development of that of arranging the figures of the gods, surrounded by stakes bearing the skulls of enemies, before the entrance of the chief's house[1].

Instability of Fetish worship.

Before the gods are thus permanently established they have usually passed through a period of probation. Only the fittest survive: if the god proves useless for the purpose for which he exists, whether of securing success in the chase, abundant crops, or fortune in war, he is forthwith abandoned. Where game and fish abound, and agriculture remains in its rudiments, the gods are chiefly required to render assistance in hunting, fishing, and war, though some are employed to secure success in cultivation. Such was the condition of the tribes throughout the vast region of the Amazon river, who had gods for each of these purposes. On an expedition of war one of the war-gods was placed in the prow of the boat; on a fishing expedition this place was occupied by a god holding a fish. When out of use the gods were stowed away in baskets; in case these expeditions proved unsuccessful the gods were thrown aside and replaced by others[2]. But those which survive

[1] Cieza de Leon, Cronica, ch. xv. &c.

[2] Christoval de Acuña, Descubrimiento del gran Rio de las Amazonas, ch. xl. Bosman gives a valuable account of the practice of the negroes of the Slave

the test of experience are cherished in families as possessions of the highest value. These are the *t'râphîm* of the Hebrews, the *penates* of the Latins, the *conopa* of the Peruvians: words in each case meaning precisely the 'nourishers' or 'food-givers' of the household [1]. According to the Biblical narrative [2], the daughter of an Aramaean sheikh considered herself entitled to take with her some of these family gods when she crossed the Euphrates with her Hebrew husband: an incident which recalls the Turcoman legend of Sekedschet, whose Chinese wife brought household gods with her as part of her dowry. These gods, it is clear, were regarded as mere chattels, existing for the benefit of their owners: in Bokhara, indeed, they were commonly bought and sold at markets or fairs [3]. So long as man worshipped only these merely factitious gods, this essential instability obviously prevented his religious ideas from gaining force and permanence: qualities which first appear when he begins to worship the distinguished dead, and only become conspicuous when he adopts as objects of veneration the permanent objects and forces of nature.

Process of making a god from a spirit.

When the Spanish missionaries questioned the Indians as to the origin of their gods, the usual reply was that they had come from the air or heaven to dwell among them and

Coast in making new fetishes of this kind. When any undertaking of importance was commenced, the first object encountered, whether dog, cat, stone, or piece of wood, was provisionally adopted as a fetish. Some offering was immediately made to it, accompanied by a promise that in case of success, the object should be established as a god. 'If our design prove successful,' said Bosman's informant, 'we have discovered a new and assisting god, which is daily presented with fresh offerings: but if the contrary happen, the new god is rejected as an useless tool, and consequently returns to his primitive estate . . . We make and break our gods daily, and consequentially are the masters and inventors of what we sacrifice to' (Description of Guinea, Letter xix.)

[1] CON = he gives; *ñupchu*, *ñupu* = food (primarily, soft food that can be sucked, as by infants). The Peruvian penates were also called *huasi-camayoc* = keeper of the house. In the Cuzco district they were usually called *chanca*, a word, according to Von Tschudi, of Aymara origin: the Yunca word is *morpi*.

[2] Genesis, xxxi.

[3] Vambéry, Geschichte Bochara's, vol. i. pp. 2, 16. Among the Hebrews the *t'râphîm* seem not to have ranked as gods: it is at any rate certain that to possess them was not regarded as a breach of the commandments against idolatry (see 1 Sam. xix., &c.).

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do them good. Las Casas has preserved an account given by the Catalan friar Ramon, one of the companions of Columbus, of the mode in which benevolent spirits were recognised and established as gods by the natives of Española. When an Indian observed some tree which moved its branches more than the rest, so that it made him afraid, he drew near and asked of it, 'Who art thou?' The tree answered, 'Call me hither a *bohique* (wizard) and he will tell thee who I am.' The bohique came to the tree, squatted before it, and performed certain ceremonies: then he arose, recited to it the dignities and titles of the principal chiefs of the island, and enquired of it, 'What doest thou here? What desirest thou? Why hast thou commanded me to be called? Say if thou desirest that I should cut thee down, if thou desirest to go with me, and in what way thou desirest that I should convey thee, to make thee a house and a manioc-plantation?' The tree then answered according to his questions, and desiring to be cut down, told him the manner how its house was to be made, and its plantation, and the ceremonies which were to be performed to it during the year. Then he cut down the tree, and made of it a statue or idol, of evil shape, for commonly they made their features resembling old frowning monkeys: he made for it the house and plantation, and each year performed to it certain rites, and had recourse to it as an oracle, enquiring and learning of it things to come whether good or evil, the which he afterwards announced to the common people[1].

Spirits, gods, and oracles.

We have here brought to our notice, as a general attribute of the gods, the faculty of foreknowledge in regard to human affairs: a faculty belonging originally to spirits, but more fully developed in the superior class of beings which succeeds them. To this faculty there is attached a correlative duty the performance of which is of the essence of the implied contract between the gods and their worshippers; the duty, namely, of advising the latter correctly in

[1] Las Casas, Apologetica Hist., c. 120. I have preferred the reading given by Las Casas of this invaluable ethnological document, to the garbled one given in Ferdinando Colombo's life of the Admiral (ch. 62).

regard to all the events of life. Probably all the primitive gods—those, that is to say, of the fetish class, now under consideration—were consulted as oracles; it is certain that they derived this character from the spirits, and that they transmitted it to gods of the most advanced type. In the earliest stages of society the great question is whether man will have food on the morrow or no; perhaps the first oracle was the spirit which directed the hungry savage in his hunting and fishing expeditions. The Esquimaux still consult spirits for this purpose[1], and their wizards are as familiar with the art of giving ambiguous replies to their anxious clients as were the well-informed keepers of the oracles of Greece. As advancement proceeded, the direction of the gods was obtained in all the affairs of private and public life; and no more striking illustration of the invariability of the laws which govern advancement could be adduced than the fact that the principal gods of aboriginal America universally perform the function of oracles, exactly as did the gods of the Old World previously to the rise of philosophy. This will be amply illustrated in the sequel.

Natural objects of worship—Totemism in early Peru.

The preceding account also brings to our notice a still earlier form of fetishism which largely underlies the aboriginal theology of America. Before man sought thus to induce the invisible powers to embody themselves in forms fashioned by himself, he conceived them as embodying themselves in natural objects. The spirit who thus became one of the *cemis* or popular idols of Hayti, had announced himself by entering into a tree. Savages often conceive the spirits as thus voluntarily embodying themselves not only in trees, but in animals of various kinds, and even in inanimate objects. Probably these external objects were once considered to be themselves the causes of the facts and occurrences which the spirits were subsequently invented to explain, and were conceived as acting on matter directly, though invisibly, such as were not already animals assuming, if necessary, the forms of animals for that purpose. Such was the primitive religion of Peru, that which

[1] Captain G. F. Lyon, Private Journal of Parry's Voyage, p. 366.

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Garcilasso denominates the idolatry of the first age, in order to distinguish it from the later theology of the Incas. In the earliest times, he says[1], each district, each nation, each family, each pueblo, each row of houses, even each dwelling, had its own god, each different from those of all others, and these were generally material objects, such as herbs, plants, flowers, trees, mountains, caves, precipices, large stones, small pebbles of different colours, especially those of jasper, found on the banks of rivers, and of jade in the district of Puerto Viejo. They also worshipped animals, some, as the jaguar, puma, and bear, for their strength and ferocity: others, as the ape and fox, for cunning: the lynx for its swiftness, and the dog for his utility to man. The condor they worshipped for its enormous size; some tribes considered themselves to be descended from it. Others sacrificed to eagles and falcons, for their strength in flight and address in striking their game. The screech-owl was worshipped for its beauty, and the common owl for its marvellous power of sight in darkness. Moreover, they regarded as gods snakes and serpents, especially those which were large and deadly, such as abounded in the forests of the montaña: some tribes worshipped lizards and toads. Garcilasso avers and repeats that the main intention which directed the social unit, whether tribe, pueblo, or family, in its selection, was to have some object for a god which was not worshipped by any other corresponding unit. It followed logically that the particular animal which was thus adopted by the members of a tribe, pueblo, or family, as their common fetish, could not be harmed by its worshippers. Hence, if it happened to be a noxious animal, they could not take up arms against it in self-defence, but must escape from it as best they could. We have here the peculiar system which is sometimes called totemism, widely spread among savages all over the world, and especially prominent in the forest districts of North America. *Totem* is the name given to such objects of worship in the language of the

[1] Lib. i. ch. ix.

Algonquin tribes who border on Lake Superior, among whom the system is considered to be best developed.

Qualities of early fetish animals.

What are the qualities which chiefly commend such animals as are above mentioned to man's veneration? This question is easily answered, when it is considered that the savage's main object in life is the capture of his daily prey. Strength, swiftness, cunning, the power of killing at a blow, whether by strength of talon and jaw, or by the poisonous fang—these are the qualities which he admires, because these are precisely the qualities which secure him subsistence and make his enemies afraid of him. When to these qualities are added an appearance of sleekness, and a lazy ease as the prominent habit of life, the ascendency which such animals gain over the imagination of the savage is complete [1]. He worships them with all his heart and soul, because they are not only his superiors in the qualities which are most necessary to him, but are absolutely the highest beings within his actual knowledge; and he undoubtedly imagines that they have the power of communicating these qualities. This worship does not assume the form of sacrifice, because such animals do not require food at man's hands. What he most desires is to be as like them as possible. In order to achieve this, he makes to himself masks representing their heads, which are worn in certain periodical ceremonies, the most prominent among which are dances in which the voice and the

[1] Among such animals, those which belong to the serpent tribe stand first, alike from their zoological peculiarities and the universality of their distribution. Serpent-worship, the favourite theme of antiquarian pedants, is explained with absolute completeness and accuracy in Genesis, ch. iii. v. 1 (cp. ante, p. 308); in modern English, 'the serpent was the cleverest of all animals of prey.' The ethnologist may advantageously accept this verse in substitution for all the ponderous rubbish which has been written on 'Ophiolatry.' Add, however, that the serpent, owing to its immense capacity for storing up flesh and fat, is in some circumstances an important food-animal, and that its use for food is or was as widely spread as its worship. In Dahomey, where the python is the great living fetish, it is still eaten outside the fetish boundary: Mr. Skertchley (Dahomey As It Is, p. 331) describes it as resembling 'rabbit with a dash of eel.' The worship of the serpent survives among agricultural peoples partly because it comes forth in warm weather, quitting its winter lair at the approach of summer; hence it is supposed to have command over the sun and the summer winds which bring the rain, indispensable to the cultivator.

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motions of the fetish animal are counterfeited. In this way he considers himself to establish ultimately an actual blood-relationship with it: a relationship often precisely defined, and usually consisting in adopting the fetish animal as an ancestor. From this it logically follows that the animal will do him personally no harm, and will transmit its qualities to him by descent. It is not within the scope of the present enquiry to investigate this subject, except so far as may be necessary to explain or illustrate the religions of the advanced districts. The worship of the coyote by hunter tribes in Western North America, and of the bear and rattlesnake in Eastern North America, are therefore only mentioned in passing; what concerns us more nearly are facts like the worship of the *cihuacohuatl*, or woman-headed snake, in Mexico, the representation of Hun-Ahpu-vuch, the creator of the world and ancestor of the sun and moon, the principal god of Central America, with a tapir's snout, that of Chamalkan, the chief deity of the Cacchiquels, under the form of a bat, the representation of a fully-armed war-god in whom the serpent and the human figure are ingeniously combined, found in one of the coast valleys of Peru[1], the place of the fox god in the ccoricancha of Pachacamac, and the traces of the worship of the puma, condor, owl and serpent, in various parts of Peru. On each of these something will be said in due place.

Worship of mountains and rocks.

The worship of rocks and stones, which Garcilasso rightly classes with the idolatry of the first age, needs a more detailed explanation. This interesting branch of ethnology requires to be viewed in two aspects, (1) the cosmological and (2) the economical. Of the former, it may be briefly said that the slightly-advanced savage looks

[1] That of Virú, or Birú, the next southward from Truxillo (Chimu), and not to be confounded with the Birú of Pascual de Andagoya (Navarrete, vol. iii. p. 420), from which the name Peru is considered to be derived. The globular vessel on which this unique figure is painted is in the British Museum. It is engraved in Squier's Peru, and in Bollaert's Researches in New Granada, &c. (Lond. 1860). It represents a warrior wearing a serpent's head mask beneath his helmet; the inflated skin of the animal, attached to the back of his neck, floats in the air. One such figure is painted on each side of the vessel.

upon the world as an animated being, the bones of which are the stony parts: of the latter, that stone is to him precisely what metal is to barbarous and civilised man. He early learns to regard the earth as his mother: the rocks and mountains are her bones. What the classical poet[1] represents as the obscure riddle of an oracle is in fact an elementary conception of primitive man. The bones of animals resemble stone in their substance: buried in the earth for a certain time under certain conditions, they are actually converted into stone. Stone forms the framework and main substance of the mother earth: man, who by preference usually considers himself to have originated in some natural cave or rock[2], is bone of her bone. He recognises this fact, when he deposits the bones of the dead in the cave from which his ancestors

[1] Ovid, Met., Lib. i. 384–415.

[2] Ante, p. 356. In Peru the population was divided into localized tribes or ayllus, the members of which were theoretically consanguineous, and ultimately became so in reality by the practice of endogamy. Each of these had its own *paccarisca* or *paccarimusca* (place of origin, Aym. *pacarihui*; cp. ante, p. 294, note 3): these were lakes, springs, great rocks, mountains, precipices, caves, &c. The Indian writer Salcamayhua (Tres Relaciones, p. 246) has preserved the ancient formula with which these were saluted: he describes it as universally in use:

'PACCARISCANCHIC,
LLUCCSISCANCHIC,
AMACHANCHICPA,
PACCARISCAN!'

'Thou art my birth-place, Thou art my life-spring, Guard me from evil, O Paccarisca!' In each of them a huaca or spirit resided, who served the ayllu as an oracle. Salcamayhua, apparently following popular tradition, considers that the paccariscas were introduced for purposes of government by Manco Ccapac. The Indians, he says, were often unable to indicate the tribe to which they belonged: each family was therefore obliged to choose a paccarisca, which amounted to the same thing as joining in an ayllu, and the members of each ayllu were distinguished from those of the rest by some peculiarity of dress. We evidently have here an instance, among many, of conceptions belonging to savagery being continued in and employed for the furtherance of advancement. Although the paccariscas, the nucleus of the ayllu, which was the social unit among the Peruvian tribes, must to a large extent have been arbitrarily adopted in the first instance, it is certain that the simple Indians had at the conquest the strongest attachment for these fictitious places of origin. Though settled in inaccessible and inconvenient places, it was difficult and often impossible to induce them to remove to better situations, the reason they assigned being their unwillingness to leave their paccariscas (Arriaga, Extirp. de la Idol. del Pirú, p. 12).

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once emerged, or in others hollowed out in imitation of it: probably it is present to his mind when he beholds through the translucent atmosphere of the highlands the snowy peaks of the great mountains, standing in clear relief against the hard, gray sky, having the appearance of being cut from white marble, and of being within reach of the hand. Both in Mexico and Peru the most prominent peaks, considered apart or in groups, were objects of direct worship: a similar worship may possibly have been rendered to Olympus and Sinai, which was afterwards absorbed in the worship of the great heaven-gods who made these noble mountains their chosen seats[1]. In Mexico the *Tepeilhuitl*, a national sacrifice to the mountains, still gave name to the thirteenth (conventional) month, on the first day of which it took place, at the time of the conquest: in Peru, though no particular time or mode of sacrifice was fixed, the great range of the Andes was always regarded as a single vast *huaca*, which every Indian worshipped in the usual way as opportunity offered[2]. Here, again, a worship of a special nature was rendered to certain rocks rendered conspicuous by their shape and isolation. Allusion has already been made[3] to the mode in which these rocks were treated; and we know as a fact that they were commonly chosen (see preceding note) as the *paccariscas* or birth-places of localised kins or ayllus. To others, probably, some other special significance was attached, now long since forgotten. Such, at least, is the case with the great rounded limestone boulder of Callca, in the valley of Yucay, sixty feet long, thirty broad, and twenty-five in height above the ground, to which are attached on each side a group of chambers, in one of which a channel for libation, winding

[1] Carmel was still worshipped in the 1st century (Tacitus, Hist. Lib. ii).

[2] It may be useful to give here in the original Aymara from an old ecclesiastical book of instruction the general interrogatories put to the Colla to obtain discovery of their gods and rites. (1) 'Huacanaca, huillca, ccollocollo, hauirinaca, cuna cauquisa hamppatiritati?' (Hast thou adored huacas, huillcas, mountains, rivers, any other things?) (2) 'Ucanacaro isi, coca, huancu, cunaspalla churasiritati?' (Hast thou sacrificed to them cloth, coca, guinea-pigs, any other things?) (3) 'Cunacuna churasta? Camise churasta?' (What and how hast thou sacrificed?)

[3] Ante, p. 356.

downwards from the top of the rock, terminates by a serpent's head. In one instance, however, the significance belonging to the rock is well known: this is the great weather-worn mass of red sandstone called Titicaca, prominent on the top of a rocky ridge with precipitous sides and dark cavernous recesses, and under which the sun was thought to have hidden itself from the great deluge[1]. Hundreds of such rocks are to be seen in the Cordillera: and to this day every such rock, at all remarkable for its shape or position, is reverently greeted by the passing Indian, uttering the while in a low voice some such ancient formula of adjuration[2] as we have quoted in a preceding note. Cuzco received its name from such a rock, *cuzco* being the word for 'rock' in the language of the indigenous tribe whom the Incas displaced[3].

Stones reputed to have been men.

Many of these great fixed stones were in Peru considered to have formerly been human beings. Of such transformations, says Father Arriaga, they told a thousand fables. In some of these rocks, it is probable, some rude resemblance could be traced to a gigantic human face or figure: to others such a resemblance had been given artificially. One legend of this kind has already been referred to[4]. Other great stones, which were shown at various places along the route of the Cordillera, at Tiahuanaco, Pucara, Xauxa, Pachacamac, and Caxamarca, were reputed to have been men whom the creator, who passed along this route after he had created man and woman[5], had turned into stones for disobedience to his commands. According to another account, they had undergone this punishment for refusing to listen to the words of Tocnapu or Tonapa, the son of

[1] See note 2, p. 295, ante. The importance of the rock of Titicaca (properly, Intitacallca) consisted in the fact that it was the paccarisca of the sun itself; the paccarisca of the Inca tribe, as has been already mentioned, was Paccaritampu or Incaptampu, five leagues from Cuzco. The neighbouring island, now called Coati, properly *Coyata(-callca)*, 'Coya' (maiden) being an usual name for the moon, was adopted as the moon's paccarisca at a later date.

[2] Squier, Peru, ch. xxv.

[3] Salcamayhua, Tres Relaciones, p. 243: cp. Montesinos, Memoirs, p. 6.

[4] Note, p. 344, ante.

[5] In the Peruvian creation-myth woman is created separately from man, the formula being *Cari cachun, Huarmi cachun* (Let man be, let woman be).

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the creator, who had assumed the form of a wandering Indian for the purpose of instructing the aborigines of the Cordillera. Those of Tiahuanaco represented a group of villagers, who, instead of hearkening to him, continued the dancing debauch in which they were engaged, and in this position were turned by him into stones[1]: another group at Xauxa commemorated a similar punishment inflicted by him on a couple who had broken the strict law of endogamy within the ayllu which prevailed in the Cordillera before the conquest[2]. Sometimes the process of metamorphosis is reversed, and stones become men. Thus in another form of the legend of the creator, the first men are made by him of stone, and are subsequently converted into flesh and blood[3]. Again, in the legend of the Ccapac-Inca Pachacuti, when Cuzco was attacked by the Chancas, an old Inca set up rows of stones, to which he fastened shields and war-clubs, so as to appear like a squadron of crouching warriors. Such, indeed the young Pachacuti, who was awaiting reinforcements from his father, the Apu-Ccapac-Inca Huiracocha, took them to be, and cried to them to advance to support him: upon which the stones became men, rising up and fighting with desperate courage[4].

Gods of the Mountains. Thunder-god of the Collao.

The gathering of clouds round lofty peaks, like those of the Andes, followed by thunder, lightning, and rain, naturally suggests that they are haunted by some powerful spirit or god who reveals his presence by these active

[1] 'Dizen que estaban la gente de aquel pueblo (Tiahuanaco, then called Chucahua) entendiendo en sus borracheras y bayles, adonde dicho Tunapa, à la despedida, lo han llegado y predicarles como solian hazer, el qual no fueron oydos; y dizen que de puro enojo les dijo, alsando los ojos al cielo en la lengua de aquella tierra . . . . . (The words of the imprecation are wanting). Y como se partiò de aquel lugar, toda la gente questavan baylando se quedò hechas piedras, combiertendose, que haste el dia de oy se echa de ber.' Rel. de Salcamayhua, p. 239. Probably this legend relates to a symmetrical group of stones still standing at Tiahuanaco. The punishment of Lot's wife, turned into the 'pillar of salt,' still existing near the Dead Sea, will doubtless occur to the reader.

[2] Salcamayhua, p. 263. Cp. the account of the original huaca of Sañuc or Huanacauri (id. pp. 242, 243), which one of the later Apu-Ccapac Incas appears to have replaced by a new figure in the form of a vulture.

[3] Betanzos, Suma y Narracion, p. 2.

[4] Salcamayhua, p. 271.

phenomena. The great atmospheric gods, who fill so important a place in the later theology of the Old World, are often thus associated with one or more conspicuous peaks: and similar conceptions occur in each of the principal advanced aboriginal groups of America. Con or Cun, the thunder-god of the Collao, is precisely the Thunar (Thôr) of the Teutonic peoples: the name being in each case derived from an imitative verb[1]. The Indians describe him, somewhat vaguely, as being red in colour, having neither arms nor legs, but moving nevertheless with the greatest swiftness in all directions. He is usually spoken of as the Ccollo-auqui ('lord' or 'father' of the mountains[2]): a powerful being, irritable and difficult of approach, but a giver of great gifts to those who succeed in gaining his favour. In general he excites profound dread. When the European tourist, having scaled the lower slopes of Illimani, proposes to cross the snow-line, the Indian guides recoil with a shudder. 'What does the white gentleman (*huiracocha*) want up there?' . . . 'To speak with the Ccollo-auqui face to face!' If he persists in his attempt, he must proceed alone, for the Indians will follow him no farther[3]. When the crops are in need of rain, it is still the practice to rouse the Ccollo-auqui from his inactive state

[1] 'Thun-ar,' according to Grimm = 'ton-ans.' The clap of thunder is in Aymara called *con-con*: so in the short Quichua hymn to the rain-spirit which Garcilasso has preserved:

'HINAMANTAS
CUNUNUNUN
ILLAPANTAC.'

'Therefore (i.e. because the brother of the rain-nymph has broken the water-vessel which she carries) it thunders and lightens.' *Cuncani* = 'rain' in the language of the wild Indians on the eastern slopes of the Cordillera of Paucartampu. The Con of the Collao (=the Quichua *Illapa*, 'Thunder'-god) must not be confounded with the Quichua *con* = 'he gives,' which appears in *Conopa* (note 1, p. 397, ante) and in *Conticsi*, the 'giver of beginning' or creator.

[2] 'El padre de los cerros.'

[3] R. Falb, 'Das Land der Inca' (1883) pp. 4–6. I quote Mr. Falb's amusing and interesting book with confidence as to matters of personal observation, but those who read it hardly require to be cautioned that in most of its pages the writer's enthusiasm and passion for linguistic learning get the better of his good sense and judgment. Probably, as Mr. Falb observes, unwillingness to attack snow-slopes with no better equipment than sandals has something to do with the repugnance of the Indians to trespass on the domain of the Ccollo-auqui.

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by silently pouring a *traguito* or diminutive libation of brandy into some tarn below the snow-line: a method considered to be more effectual than the primitive method of casting in stones, still practised by the peasants in Styria and other parts of Europe, exactly as in Peru at the conquest[1]. The condor, properly *cunturi*, is his bird, perhaps his messenger, as the eagle is of Jupiter. The Tlaloquê[2], or rain-gods of the Mexican mountains, who derived their name from the soil which they fertilized, gods of the same class with the Ccollo-auqui of the Collao, can here only be mentioned in passing. The principal among them, reputed by the Toltecs to be the oldest of their deities, had his seat on Mount Tlaloc near Tezcuco. The images and sacrifices of these important gods will be described in a subsequent account of the special theology of Mexico.

Economical importance of stone in early times.

We have said that stone is the metal of primitive man. Where stone is not found, the bones of animals may to some extent serve as a substitute; where both are available the latter form a supplementary material of great value, but can never entirely take its place. When the importance of this substance in the savage life is considered, it is readily understood why vast levels of the New World, eastward of the intertropical mountain districts, where the fat vegetable humus for hundreds of miles yields no fragment of stone, though covered with luxuriant vegetation and abounding in the lower animals, are destitute of advancement, and are only occasionally traversed by savages of the lowest type.

[1] Falb, p. 6. The practice is noticed in Mr. J. G. Frazer's learned and ingenious work 'The Golden Bough.' Among the interrogatories put to the Indians to obtain discovery of their false gods (Rivero and Tschudi, Antig. del Peru, p. 173), occurs the following: 'A que laguna tiran piedras para que no se seguen, y vengan lluvias?'

[2] Plural of *tlaloc*, an archaic adjective from *tlalli*=terra. The explanation given by Torquemada (vol. ii. p. 529), who derives the name from the *tlalocan* or imaginary paradise, where green maize, pumpkins, chilli pepper, large tomatoes (*xitomamê*) and beans, grew in a perpetual spring, should apparently be reversed. The name of the *tlalocan*, to which those who died suddenly or of incurable diseases (i.e. by special visitation of the gods) were considered to be transported, is evidently derived from the *tlaloquê*, who were supposed to keep it in eternal fertility.

Though man has risen from savagery by domesticating animals and cultivating roots and cereals, it was by making stone into tools and implements that he rose from the lower grades of savage life to those higher ones in which herdsmanship and agriculture had their beginnings. A long ethnographic period intervenes between ragged stones, clutched in the hand, such as the Karok of California even recently employed to kill their game and batter their enemies, and the heads of arrows, spears, and hatchets, admirably designed and symmetrically cut, of the higher hunting tribes, and the knives of jasper and sharp flakes of obsidian, scarcely less effective than the steel razor or scalpel, which were used in Mexico at the conquest. Man must early have studied the various kinds of stone from an economical point of view. Undoubtedly metals were at first considered to be stones which could be shaped into articles of use and ornament by a process less laborious, that is, less costly, than chipping; that is to say, by hammering. The purer ores of gold, silver, and copper, were found to be malleable in their native form: all could be rendered malleable by heating. Probably the first metallurgy was to hammer out and give a rude shape to nuggets of gold and silver, which then took the place of those bright stones which the lowest savages insert in the pierced lip, nostril and ear. Long after this, stone continued to be the material of weapons of war and hunting: and the latest stone weapon, the sling stone, survived longest of all. While the ragged stone, set in a ponderous wooden handle, was replaced by the formidable copper mace-head of Peru, the most effective weapon of the far more skilled warriors of Mexico was a slender wooden club, set with cutting stones of obsidian, and forming a rudimentary sword. In the civil and religious aspects of early advancement the prominence of stone is equally conspicuous. We have noticed that it was the material of the house, the tomb, the temple, the agricultural terrace, the irrigation channel, and the fence wall. Maize was pounded with a stone roller on a stone slab: the food-animal was ripped up with a stone knife, and red-hot

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stones were used to make the water boil in the earthen cooking vessel. Spirits often entered into rude stones, which consequently became objects of worship. The flat stone on which the flesh and blood offerings were left for the spirits, raised on a pile of smaller stones, became the altar: in the most advanced times, in Mexico and Central America, the human sacrifice was slain with a stone knife on a stone slab slightly elevated in the middle, the neck and limbs being held down with a heavy sacrificial collar and fetters of chased stone. Permanent votive offerings of stone, of various degrees of value, from the elaborately carved stone *chocllo* or llama to the small stones picked up and thrown in heaps as offerings to the mountain-gods, long survived the invention of metal in Peru. Here, again, where human sacrifices usually consisted of female children, these were slain by placing the neck on one stone and breaking it with another. The ceremonial seats of the camayocs or government officials were hewn in the solid rock[1]: and, lastly, stone was the sacred instrument of vindictive justice. Ancient usage prescribed that capital punishment should be performed, as among the Jews, by battering the criminal to death with stones; but a more merciful mode of execution, that of casting headlong from a height, in which the principle was manifestly preserved, had come into use in some places, in exactly the same way as here and there in the Old World. Penal chastisement was performed by battering the upper part of the body with stones: a most severe form of punishment, which possessed, however, the advantage of bringing closely home to the criminal the nature of the extreme penalty which the law prescribed.

Moveable huacas.

When we consider the economical importance which stone thus possesses for primitive peoples, its place in the system of worship becomes intelligible; it is also clear why stone may be at once the material of the *huaca*[2] and the

[1] Ante, p. 357.

[2] Let this word be once for all explained. It should be premised that it is now chiefly used to denote the ruins of aboriginal buildings. A burial mound, an old house—any place, in short, which may be expected to yield gold and silver relics, is a huaca: the relics themselves are huacas. With this use of the

offering made to it, exactly as in a later stage of idolatry, the material of both image and offering sometimes consists of the precious metals. The moveable huacas of the Peruvians, an extremely numerous class, which includes the *conopas* or penates, were usually stones or pebbles of unusual shape or colour, unshaped by the hand[1]: often, however, they were carved to resemble fruits, animals, or men and women, in which case they were considered to be the sons and wives of other huacas. Few households were without conopas representing the llama and the choclło, or ear of maize. The worship of the conopas, which were, as a rule, carefully concealed from public view, was an hereditary charge, descending from father to son, precisely as in the Old World. To the class of moveable huacas belonged personal amulets and love-charms (*huacanqui*) which can be only mentioned in passing, concerning, as they do, the antiquary rather than the historian.

Agricultural huacas —*Ccompas.*

Some notice of a peculiar development of fetish-worship, connected with the labours of the field, though not of the

word is connected the term *huaquero*, which denotes a wretch who gains subsistence by conducting the tourist to these 'huacas,' and assisting him in despoiling them: a calling which the Peruvian government actually permits to be made the object of joint-stock enterprise! In aboriginal times the word denoted OBJECTS OF WORSHIP OF ALL DESCRIPTIONS, not excluding those which were denoted by the higher title *huiracocha* (ante, p. 395). The term is simply the verb HUACAN='he howls or cries,' which denotes not only the natural inarticulate howl or cry of man, but the bark, cry or roar of quadrupeds, and the note of birds. All objects of worship were saluted, as a part of the prayer, with this inarticulate cry or howl, which the metre of extant prayers shows to have been prolonged into a kind of fervent groan or shriek. Thus, a prayer to the creator begins—

A ——— TICSI
HUIRACOCHAN,
ÇAYLLA CAYLLA
HUIRACOCHAN,
TOCAPU ACNAPU
HUIRACOCHAN, &c.

Again, a prayer to the Sun begins—

A ——— PUNCHAU
INTIYAYAY, &c.

This A is not a mere vocative, a kind of vocative case being expressed by the final *n* (a form now disused). Cp. *huahua*=an infant, from its cry (both Aym. and Quich.).

[1] 'Los mas vezes sin figura ninguna' (Arriaga, p. 12).

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first importance, cannot well be omitted from an enquiry the purpose of which is to investigate the influence of agriculture upon religion. The importance, in the New World, of the terrace and irrigation channel (acequia [1]) has been already noticed. Once built of massive blocks, the terrace needs no further attention, for it never gets out of repair. Not so, however, with the acequia. Stones may fall and choke it; cracks may cause leakage; most to be dreaded of all, the increase-giving waters from the lodazal, laden with their rich burden of mineral mud, may either fail to flow in the requisite abundance, or may appear too late, or too early, to supply the needs of the cultivator. Hence the establishment of the *ccompa*, or god of the acequia, to whom sacrifices were made at the planting of the seed. No deity was invoked more earnestly: the worship of none was extirpated with greater difficulty. In the interrogatories put to the Indians to obtain discovery of their false gods, that referring to the *ccompa* has a prominent place.

'What is the name of the huaca which you adore in order that the acequias may not be broken? What huaca do you adore in order that it may not rain immoderately, or that it may rain in due season? What huaca do you adore in order that the maize may have good growth, and may not be eaten of the worm? From what lake do you draw pitchers of water to sprinkle the chacra (maize-field) in order to obtain rain [2]?'

Huancas and Saramamas.

We cannot be wrong in concluding that the other huacas intended in these questions were those called by Arriaga *chichic*, and *huanca* [3], which were set up at the boundaries of the chacras. One of these, judging from the numbers destroyed by the commissary Hernandez de Avendaño, sufficed for each plantation belonging to an

[1] This term, universal in Spain and the New World, may be used for brevity's sake. It is the Arabic *sâqyah*.

[2] Arriaga, p. 90: Villa-Gomez, ap. Rivero and Tschudi, p. 173.

[3] Two names for one huaca. Chichic = god of germination (part. of *chichin* = he sprouts). *Huanca* means (1) a drum, (2) anything full to bursting (*huancaran* = he eats to repletion). The chichic or huanca represented an ear of maize of enormous growth, ready to burst its shell.

ayllu[1]. Similar fetishes were known in some parts of the Old World; made of stone, they represented a gigantic stalk of corn, surmounted by an equally gigantic ear. From such objects, worshipped for the purpose of inducing the corn-spirit to make the plant grow to the greatest possible size, arose the fable that in the golden age the ear of corn actually possessed these enormous dimensions: according to Toltec tradition, a single ear of maize, in the days of Quetzalcoatl, was a load for a porter[2]. A similar tradition exists in Russia: the greatest living master of fiction has founded upon it one of his most charming apologues[3]. The worship of the huanca is closely connected with the actual worship of the maize-plant which it follows next to describe: both the huanca and the ear of maize, imitated in stone, and used as a conopa, were in fact sometimes known by the name *saramama*, a name properly applied to the maize-spirit when worshipped under the form of the plant itself.

The Huamantantac.

Before proceeding to the widely-spread phase of agricultural religion just indicated, we may briefly notice a curious one which was confined to a single locality. We have already mentioned the deposits of the guano of sea-birds which exist in such abundance on the headlands of the Peruvian coast and on the neighbouring islands[4], as an important resource of the maize-growing populations of the coast valleys. Why these birds should flock together, on these headlands and islands, in order to accumulate these invaluable deposits for the use of man, appears to have presented itself to the aborigines as a problem requiring solution: and according to their theory of things the cause of this phenomenon was easily identified. It was, of course, the work of a spirit: equally of course, of a benevolent spirit who devoted himself to this particular object. They denominated him the *huaman-tantac*, or 'he who

[1] Arriaga, p. 9. This writer accompanied Avendaño on his visitatorial mission in 1617 and 1618. They destroyed 189 huancas, as against 3,418 conopas and 45 ccompas.

[2] Torquemada, vol. ii. p. 49.

[3] L. Tolstoi, 'The Grain of Wheat' (Tales for the People).

[4] Ante, p. 247, note 2, p. 347.

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causes the cormorants to gather themselves together[1]: an important huaca of the people of Chincha-suyu, to whom they sacrificed before putting out for the Chincha islands, to the end their rafts or balsas might not be overturned, and again when the islands were reached, with much dancing, feasting, and drinking of chicha[2].

Spirits of food-plants. Saramama.

We pass on to consider a form of fetishism which possesses a peculiar interest because it marks the transition between these primitive agricultural fetishes, on the one hand, and those permanent objects and forces of nature which appear to exercise a special influence upon the processes of agriculture, on the other. The phenomena of vegetable growth, viewed in their connexion with the necessities of food-provision, strongly attract the attention of the savage. What is it, he asks himself, which makes the food-root or the corn to grow? To this question his theory of things suggests but one answer. It is, of course, a spirit: equally of course it is a spirit which exclusively acts upon and dwells in this particular plant. To each, then, of the alimentary plants, there belongs a corresponding spirit, which is conceived as the cause of its germination, nourishment, and growth. Thus in Española a spirit was worshipped which was believed to cause the ajes to take root and grow[3]. Such a spirit is usually called the 'mother' of the plant[4]. The Hindus worship the cotton-spirit as *Bhogaldái*, or 'cotton-mother.' In Peru we have the *acsumama*[5] or potato-mother; the *quinuamama* or quinua-mother; and the *saramama* or maize-mother: the coca

[1] Tantan='he collects,' is generally used to denote the task of the herdsman.

[2] Arriaga, p. 31. The printed text has *huaman-cantac*: the latter word is meaningless. There can be little doubt as to the correctness of my emendation.

[3] Peter Martyr, De Orbe Novo, Dec. 1, cap. 9.

[4] Exceptionally, as in the beautiful legend told by the Pima Indians concerning the inhabitants of the deserted Casas Grandes, the maize-spirit appears as an actual mother of mankind. They describe her as a maiden living in isolation, unmoved by the addresses of suitors, and giving maize to the hungry Indians in times of dearth. One day, as she lay asleep, a raindrop fell on her naked bosom, and she became the ancestress of the maize-growing Pueblo Indians (cp. ante, p. 327).

[5] *Acsu*, the Quichua name for the potato, has survived only in the Chincha dialect; in the Cordillera it has been displaced by the Spanish word *papa*.

tree also had its *cocamama*[1]. Of these the saramama was the most important. Sometimes this spirit or goddess was embodied in hard stones, laboriously wrought into the shape of the ear of maize, such as are often found in the coast valleys[2]. Stones similarly fashioned were used to represent the acsumama. The mother of maize was often worshipped under the form of plants which had something abnormal or sport-like in their formation. Thus, the *ayrihua-sara* was a plant which produced ears of different colours: when, for instance, in a crop of yellow maize one plant produced an ear of violet colour. Such a plant was an important huaca, and was waved in the harvest dances: the spirit had evidently been actively at work. Another huaca was produced when the rows of grains were twisted spirally round the core of the ear, instead of being straight. Such an ear was stuck as a protective fetish into the top of the *pirhua* or corn-crib when the maize was stored: hence they were called *pirhua-sara*. The *saramama* was also worshipped under the form of a puppet (*huantay-sara*), made of the finest new maize stalks that could be found, and renewed at each successive harvest, in order that the maize seed might preserve its vitality. This figure, richly clothed, was ceremoniously installed in one of the *pirhuas*, and watched during three nights. A sacrifice having been offered, the *huacap-huillac*, or spirit-interpreter, enquired of the spirit, 'Mamasara, canst thou live until next year?' If the spirit answered affirmatively, the figure remained until the following harvest: if not, it was taken back to the chacra and burnt, and a substituted figure was consecrated with similar ceremonies[3].

Spirit of all nature in Peru-Pacha-camac.

In Mexico, as will be presently shown, the maize-mother developed into an important group of deities; nothing of

[1] Villa-Gomez, Carta Pastoral contra las Idolatrias (Lima, 1649): Arriaga, Extirpacion, &c., p. 16.

[2] See the engraving of one made in variegated talc, found near Lima, in Squier's Peru, p. 91. The Ayrihua was the harvest dance.

[3] See Mr. Frazer's 'Golden Bough' for illustrations of similar practices elsewhere. The harmless paganism of the Aymuray was allowed to survive the introduction of Christianity. Acosta, from whom (Lib. v. ch. 28) this description is taken, had often seen it.

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the kind, however, took place in Peru, where it remained a mere rustic fetish. But it will be remembered that in Mexico the corn-plant occupied a more important place in the alimentary equipment than was the case in Peru, and that the domesticated turkey, the principal source of flesh-food, was also fed upon maize. The auchenias in the sierra, and the unlimited supply of fish in the coast valleys of Peru, to say nothing of the potato and the quinua-bean, rendered the maize here of less importance. The chief reason, however, for this arrest of development, in the case of the maize-spirit, is undoubtedly to be found in the prevalence, throughout Peru, of a definite conception of an universal spirit of animated things (Pachacamac) and the close association of this conception with those of a creator-god (Conticsi, Pacharurac) and of a ruling or directing god (Pachayachachic). These important theological conceptions will be presently examined and traced to their origin: in the present place it is sufficient to notice that the distinct conception of a general spirit of animated nature and its embodiment in a single great deity, as was the case in Peru, are unfavourable to the development of the spirit of a particular plant, however important in itself, into one or more deities, as happened in Mexico.

Corn gods in the Mexican district—Totonacapan.

Before considering the development of the worship of the maize-spirit on the plateau of Anahuac, it may be useful to notice the form which this worship assumed in the adjoining lowland district of Totonacapan, where the cultivation of the maize was perhaps of greater antiquity than on the plateau, and where, as has already appeared, the population of Anahuac naturally sought subsistence in times of dearth[1]. The Totonacs worshipped the corn-spirit under names which were translated into Mexican as Tzinteotl (goddess of beginning or origin) and Tonacayohua (provider of our food). They considered her to be the wife of the

[1] Ante, p. 325. Among the explanations of the name which have been suggested, it is curious that no one has connected it with *tonaca* (ante, p. 323) indicating abundance of food. Tlaxcallan (place of corn), Mechoacan (place of fish), Mazatlan (place of deer), Chianpan (place of the Chian), Zapotecapan, Zapotlan (place of the Zapote), are names of the same class.

sun, their supreme god. Theoretically subordinated to him, the maize-goddess was in practice the chief deity of the Totonacs: it was to her service that the principal warriors, quitting their wives and children, dedicated themselves in their old age. Her chief teopan[1], one of the most famous in Mexico, owing to the repute of the goddess as an oracle, occupied an elevated site, and was surrounded by large gardens and artificial groves of fruit and other trees[2]. Human sacrifices formed no part of the worship of Tonacayohua: rabbits, with pigeons, quails, and other small birds, sufficed for her rites. She was considered to exercise great influence over her husband, the sun: and through her it was hoped that the sun would send among the Totonacs a son of his own, to deliver them from the tyranny of the Mexicans, who compelled them not only to furnish, amongst other tributes, a prescribed number of men and women for sacrifice in Mexico, but to perform similar bloody rites to the Mexican gods throughout Totonacapan itself[3]. The prevalence of this idea renders it easy to understand the welcome given by the Totonacs to the Spanish invaders, whom they hailed as veritable gods, and who made this district the base from which they successfully attacked the confederacy of the lake pueblos[4].

Maize-mother in Mexico.

In Mexico itself the corn-spirit developed into a group of deities who were worshipped with rites less humane. Here the original maize-mother of Peru re-appears exactly, in the form of a goddess called Xilonên (mater comata[5]),

[1] The word *teopan*, like *ccoricancha* in speaking of Peru, is used instead of 'temple' in order to prevent misapprehension. The teopan consisted of a spacious precinct enclosed by a wall, and containing buildings assigned to various religious uses (penance-houses, fasting-houses, repositories of skulls, dried human skins, and metl-prickles, dancing-schools for victims, &c.). The teocalli, or shrine of the god, was a small building within the teopan, erected on the top of a mound or pyramid, and approached by a flight of steps.

[2] Aboriginal ruins abound in the northern part of the state of Vera Cruz, the ancient Totonacapan. Possibly the seven-storied pyramid of Papantla, on the eastern slope of the mountains, sixteen leagues from the sea and fifty-two north of Vera Cruz (B. Mayer, 'Mexico,' vol. ii. p. 196), was the great teocalli of the maize-goddess of the Totonacs.

[3] Torquemada, vol. ii. p. 134. Cp. ante, p. 206.

[4] See Bernal Diaz, chapters xliv.–lii.

[5] The old Mex. *xilotl*=hair, appears also in the plants *xiloxochitl* (not, as

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who represented the *xilote*, or ear of the green corn, with its gracefully waving plume or tassel, of long silk-like fibres, shooting through the leafy envelope in which the ear is enclosed. The goddess of maize, in allusion to a tradition which represented her as a destroyer of serpents, and to the serpents with which her idol was enwreathed, was best known as Chicomecohuatl, or 'Seven Serpents.' In the life of the maize, let it be observed, there are three principal incidents: the appearance of the plant above ground, the formation of the green ear, and the ingathering of the mature crop. The first of these possessed a high importance. Often, it may well be believed, until the precise times and methods of planting had been discovered, the maize failed to germinate. The Iroquois women made the seed of the pumpkin germinate before planting it, by embedding it in black earth enclosed between two pieces of bark, and placed in a warm situation above their fire-places[1]; similar practices were doubtless employed elsewhere[2], with regard to the maize, to which they equally apply. In Peru, the huacas generally were considered to influence the germination of the maize: and hence, at the sowing, all the principal *huacap-huillacs* were careful to fast, together with their wives and children, from the moment of planting until it was a finger's length out of the ground, eating nothing but boiled maize and herbs, and drinking no

Dr. Brinton explains it in his 'Ancient Nahuatl Poems,' p. 167, the flower of maize, but a very common dwarf flowering shrub), *xilometl*, &c. *Nen* is the archaic form of *nan*(*tli*)=mother. The allusion will be presently explained.

[1] Lafitau, Mœurs des Sauvages, vol. ii. p. 78. The Iroquois considered the pumpkin-spirit, like the maize-spirit and the bean-spirit, to be females. The male maize-spirit of Mr. Longfellow's Hiawatha, though a genuine aboriginal conception, is the invention of an Indian story-teller.

[2] It is believed that certain secret practices relating to the planting of maize were handed down among the women: this appears to be the true meaning of the remarkable answer given by an Indian to the Jesuit missionary Gumilla, in reply to his remonstrances on the devolution of the severe labour of agriculture on the females of the tribe: 'Tu, padre, no sabes de estas cosas .... Has de saber, que las mujeres saben parir, y nosotros no. Si ellas siembran, la caña del maiz da dos ó tres majorcas; la mata de yuca da dos ó tres canastas de raices; y asi multiplica todo. Porque? porque las mujeres saben parir, y saben como han de mandar para el grano que siembran: pues siembran ellas, que nosotros no sabemos tanto como ellas' (Orinoco Ilustrado, vol. ii. p. 237).

chicha, but only its muddy sediment, called concho. The ceremonies observed at this stage of the growth of the maize, called the Ccusqui-Raymi, and generally celebrated about the month of August, will presently be referred to: what is noticeable in the present place is that in Peru these ceremonies were of a general nature, having reference to all the greater huacas, or huiracochas[1], and were not definitely connected, as in Mexico, with a particular deity. The sacrifices which in the latter district were made to the goddess of maize at the germination of the corn are thus described by one of the old Mexican antiquaries:

Spring feast of Chicome-cohuatl.

'In the fourth month of these Western Indians called Hueytozoztli[2], which corresponds to the fifth day of our April, they celebrated a feast to the goddess of the harvests, called Centeutl, otherwise Chicomecohuatl, meaning Seven Serpents. Among the many and various ceremonies which they performed and things which they invented for its greater and more solemn celebration, one was to place sword-grass and bulrushes at the doors of the houses; these they daubed with blood drawn from their ears and their legs, which they pierced and wounded for this sacrifice. Those of noble descent and rich in temporal goods, besides this, enwreathed their doors and houses with boughs of a shrub called Acxoyatl[3] (a shrub greatly valued among them, and very commonly used in the temples for the sacrifices): and with these two sorts of boughs and herbs they enwreathed and decorated the statues of the gods, which they kept in their houses. They went to the maize-fields, and cut stalks of the maize (which were yet tender), bedecked all the leaves and shoots with flowers, and placed them before the altars and gods in the house called Calpulli[4]; and at the same time they placed before them victuals and meats, according to each man's pleasure and good judgment.

'Having done this in all quarters of the town, they went to the temple and altar of the goddess whom they called Chicomecohuatl, and in her presence performed great

[1] The Creator, Sun, and Thunder. Molina, ap. Markham, Rites and Laws of the Incas, p. 20.

[2] The 'Great Watch' (from the watch or wake kept in the houses (cp. post, p. 429), accompanied by a general fast). The symbol of this (conventional) month is a house decorated with bulrushes.

[3] A wild laurel (ante, p. 374, note 1).

[4] The Great or Common House of the village.

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skirmishings in the manner of a combat, with which they entertained those who had come to see the feast celebrated. All the young girls carried on their backs, in the fashion in which they carry loads, ears of maize of the harvest of the previous year. These they carried in procession and presented to the said goddess. Having presented them with much devotion and reverence, they carried them back to their houses, as a thing which they considered to be blessed, and kept them for seed of the coming year. Some of them they placed in the midst of their corn-cribs or grain-hoards, where they kept their maize stored up, making them as it were the heart of their store or hoard, in order that it might be preserved, and might not rot. We must note that in this feast, and in all the others, even where no mention may be made of particular human sacrifices, such sacrifices were performed, because it was the universal practice to make them in all their festivals, nor was there any festival kept without them. It may, however, be the case (as will appear in treating of this goddess, her qualities and conditions) that she did not delight in human blood, and was content with the death of other animals, especially of quails, the purpose whereof appears in its place. These gentiles celebrated this feast at this time, by way of giving thanks for seeing the maize now shooting forth and of sufficient growth, whence they had good hope of reaping the same. And they made this feast to this goddess, believing it to be pleasing to her, in order that she might preserve the same for their use[1].

These public rites were supplemented by private offerings of food made in every house (*calconahuac*). Among the *tepictoton* or 'little gods,' domestic idols answering to the *conopa* of Peru, there was always a figure of the maize-goddess: before each of these figures, decorated for the occasion, as we have seen, with greenery, they now placed a basket of food. On the top of the food-offering was a cooked frog, bearing on its back a piece of the corn-stalk stuffed with pounded maize, chian, and beans. The frog, as will presently be explained, represented the female Tlaloc or rain-goddess, whose co-operation with Chicomecohuatl was necessary to the due growth of the corn: a frog must be sacrificed at this season in order that its vital force might pass into the sandy soil, that the life-giving

[1] Torquemada, Monarquia Indiana, Lib. x. ch. 13.

water might be abundantly furnished to the roots of the maize and other food-plants which constituted its symbolic burden. There was thus, it will be seen, a threefold celebration of this spring feast of the maize-goddess: (1) in each house, (2) in the Calpulli or great house of the pueblo, and (3) at the teopan, in the great enclosure or quarter of the gods. Torquemada seems to doubt whether human sacrifices were offered at this festival, or not. It appears to us that such offerings formed no part of these rites, but were reserved for the great midsummer festival of the maize-goddess. The spring festival, it would appear, mainly represented ancient rustic rites, rites of the family and village, handed down from the early Mexican or Toltec age: the midsummer festival was moulded by later ideas. The largesse of food to the populace, the sacrifice of a foreign slave, who formally represented the object of worship, the solemn participation of the war-chiefs in the ceremonies, all lend support to this view.

Midsummer sacrifice to Chicomecohuatl—the Xalaquia.

The principal rites of 'the long-haired mother,' lasting eight days, commenced when the plant had attained its full growth, and fibres shooting forth from the top of the green ear indicated that the grain was fully formed. During this festival the women wore their long hair unbound, shaking and tossing it in the dances which were the chief feature in the ceremonial, in order that the tassel of the maize might grow in the like profusion, that the grain might be correspondingly large and fat, and that the people might have abundance. In token of this, during the days of the festival, every person, male or female, child or adult, who appeared within the precinct of the teopan, was entitled to drink without stint of chian *pinolli*, a beverage already mentioned [1], and to eat as much maize porridge as could be grasped in the hand. The materials of the feast were supplied from the stores of the chiefs: whence the (conventional) month in which it took place, the eighth of the Mexican year (June 25 to July 14), received the name of Hueytecuilhuitl, or 'great festival of the chiefs.' At sunset, on each day of the feast, the precinct of the teopan was

[1] Ante, p. 380. The use of chian for chicha indicates late date.

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illuminated with pine torches, and dancing began, accompanied by singing. Conspicuous among the dancers was a slave-girl whose face was painted red and yellow, in token of the colours of the corn, wearing an *amacalli*[1], or pasteboard mitre, surmounted by waving plumes, in imitation of the corn-mother, whom she represented: she was conducted from the building where she was guarded by three old women called her 'mothers,' who watched her day and night. Temporarily released from her confinement, and well trained by practice in the dancing-school where the victims were instructed in the ceremonial, the poor creature danced vigorously, amidst the cheers of the people: for the greater the spirit she showed, the greater would be the yield of the crop that was now growing. On the last day of the rites, the women dedicated to the service of the long-haired mother assembled in the precinct of the teopan, sang the praises and valiant deeds of the goddess, and danced with the victim. On the last night of the rites, dancing was prolonged until daybreak. The chiefs and warriors of Mexico then appeared on the scene, and danced the solemn death-dance, in which she who was to die, exhausted with fatigue, joined for the last time. The procession to the teocalli was then formed: the warriors led the way, the victim followed, surrounded by women attired similarly to herself. Rather dead than alive, she was then lifted up the steps of the teocalli, stripped of her festal clothing, and her heart offered to the maize-mother[2].

[1] *Amatl* (=paper, ante, p. 373) + *calli* (=house).

[2] Torquemada, Lib. x. ch. 19. Whether the Xalaquia was made acquainted with her approaching fate is not clear. We believe, however, that she was not; for although in the case of male victims the fact was announced to them some days beforehand, this was certainly not done universally, if at all, in the case of females. The girl who was sacrificed to the earth-mother in the (conventional) month Ochpanitztli, was kept in absolute ignorance of her fate, and was told that the ceremonies in which she had to take part were preparatory to her conjugal or quasi-conjugal union with 'the great chief'; because if she had died with sadness and weeping it would have been a bad omen, followed, in all probability, by many deaths of warriors in the field and of women in childbed. To this it may be added that it was comparatively easy to conceal their destiny from female slaves, usually bought in the market of Azcaputzalco, and probably speaking nothing but their native Otomi language. The prisoners, on the other hand, who were taken in the periodical raids made

The exuberant vitality of the youthful victim, of which the heart was considered to be the seat and source, was understood to enter the soil, and to recruit the exhausted vitality of the old goddess: hence they named her *Xalaquia*, 'she who is clothed with the sand.' Until the Xalaquia had been slain, no one might eat of the principal luxury of the New World, the sweet, green ear of the maize, for the corn in that case would have failed to ripen.

Idol of Chicomecohuatl.

The uncouth idol before which these sacrifices were performed, a mass of hard, bluish-grey basalt, eight feet and a half high, is still to be seen in the National Museum of Mexico: no other among the great Mexican idols is now in existence. It is not easy to estimate its real age: but it may be inferred, amongst other things from the power and freedom shown in the hands, in the symbolic frog incised on its under side, and in the snakes which hang around its middle, that it dates from a period not much earlier than the conquest, having probably replaced an older statue of similar shape. Hitherto, by a singular concourse of circumstances, it has received an explanation not merely erroneous, but absurd, and it is here for the first time identified with the goddess of corn [1]. The idol simply

into Tlaxcallan, and the slaves sent by way of tribute from other provinces, probably knew already the fate which awaited them, and would certainly learn it in the *quauhcalli*, a bamboo pen, where they were confined and fattened, together with other victims, preparatory to the sacrifice.

[1] All the great idols of Mexico were thought to have been destroyed, until this was disinterred, amongst other relics, in the course of making new drains in the Plaza Mayor of Mexico in August, 1790. The discovery produced an immense sensation. The idol was dragged to the court of the University, and there set up; the Indians began to worship it and deck it with flowers: the antiquaries, with about the same degree of intelligence, to speculate about it. What most puzzled them was the fact that the face and some other parts of the goddess are found in duplicate at the back of the figure; hence they concluded it to represent two gods in one, the principal of whom they further concluded to be a female, the other, indicated by the back, a male. The standard author on Mexican antiquities in Mexico at that time was the Italian dilettante Boturini; of whom it may be said that he is better, but not much better, than nothing at all. From p. 27 of his work the antiquaries learned that Huitzilopochtli was accompanied by the goddess Teoyaominqui, who was charged with collecting the souls of those slain in war and sacrifice. This was enough: the figure was at once named Teoyaominqui, or Huitzilopochtli, or the one plus the other, and has been so called ever since. The antiquaries next elevated this imaginary goddess to the rank of the war-god's wife. A

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reproduces the primitive fetish which it superseded. The maize, tied up in bundles, was carried on the backs of women from the field to the corn-crib. Out of a certain number of these bundles was made the fetish representing the maize-mother. One bundle, of unusual size, represented the head: on each side of this were pasted pieces of paper, having large beans in the middle representing her eyes; pips of pumpkins represented her teeth; strips of paper represented her mouth and labret[1]. Two small bundles, attached transversely by way of shoulders, and similarly decorated, served for carrying her in procession on the shoulders of women. Paper hands were stuck about her figure, indicating her as a giver of food: a few drinking-cups, made of green pumpkins, denoted her as a giver of

soldier, says Bardolph, is better accommodated than with a wife: *a fortiori* so is a war-god. Besides, as Torquemada (vol. ii. p. 47) says with perfect truth, the Mexicans did not think so grossly of the divinity as to have married gods or goddesses at all. The figure is undoubtedly a female; it has no vestige of any weapon about it, nor has it any limbs: it differs in every particular from the idol of the war-god Huitzilopochtli, every detail of which is perfectly well known. There never was any goddess called Teoyaominqui: this may be plausibly inferred from the fact that such a goddess is unknown not merely to Sahagun, Torquemada, Acosta, Tezozomoc, Duran, and Clavigero, but to all other writers except Boturini. The blunder of the last-named writer is easily explained. Antonio Leon y Gama, a Mexican astronomer of whom something remains to be said in the sequel, wrote an account of the discoveries of 1790, in which, evidently puzzled by the name of Teoyaominqui, he quotes a MS. in Mexican, said to have been written by an Indian of Tezcuco who was born in 1528, to the effect that Teoyaotlatohua and Teoyaomiqui were spirits who presided over the 15th of the 20 signs of the fortunetellers' calendar, and that those born in this sign would be brave warriors, but would soon die. (As the 15th sign was *quauhtli* = the eagle, this is likely enough.) When their hour had come, the former spirit scented them out, the latter killed them. The rubbish printed about Huitzilopochtli, Teoyaomiqui, and Mictlantecuhtli in connection with this statue would fill a respectable volume.

[2] The reason why the features were duplicated is obvious. The figure was carried in the midst of a large crowd; the duplicate at the back was for the benefit of those who followed. Probably it was considered to be an evil omen if the idol turned its face away from its worshippers: this the duplicate obviated. So when the dance was performed round the figure (cp. Janus). This duplication of the features, a characteristic of the very oldest gods, appears to be indicated when the numeral *ome* (= two) is prefixed to the title of the deity. Thus the two ancestors and preservers of the race were called Ometecuhtli and Omecihuatl (= two-chief, two-woman), ancient Toltec gods who had at the conquest become less prominent in the theology of Mexico, and who are best represented in that of the Mexican colony of Nicaragua (ante, p. 394).

drink. A couple of skulls, reminiscences of former sacrifices, were hung at her waist in front and behind: her *cueitl*, or jupe, was hung round with the dead snakes killed in the course of the harvest. Below these were maize ears and leaves; a few strips of paper, attached here and there, gave finish to the figure. In the bundle of ears which served as a head was placed a large waving plume. The 'long-haired mother' was now complete. Such was the primitive fetish which in a later age was reproduced in a more permanent material. On the base of the stone idol, by way of making it a complete compendium of rural theology, was engraved a spirited representation of the *matlal-cuiyatl*, or green frog, the living fetish in which the rain-spirit was understood to be embodied, the giver of the life-giving water absorbed by the roots of the plant. The sapient antiquaries who have taken a bundle of maize-bags, without arms or legs, for the god of War, consider this harmless creature to be the terrible *Mictlantecuhtli*, or 'Lord of Hell!'[1] In the latest Mexican theology this primitive fetish has received the name of Chalchihuitlicuiyatl, more sonorous, but having precisely the same meaning. 'Green Frog' ranked with Chicomecohuatl as one of the six great goddesses; she was considered to be a sister of the Tlaloquê, or rain-gods of the mountains, and formed one of a triad with Chicomecohuatl, and a minor deity called Huixtocihuatl, or 'goddess of salt,' as the 'nourishers' of the people[2].

Frog-worship and maize cultivation.

If anything were wanting to our identification of the idol just described with the goddess of corn, it would be supplied by the animal engraved on its base. Throughout the New World, from Florida to Chile, the worship of the frog or toad, as the offspring of water and the symbol of the water-spirit, accompanied the cultivation of maize. The Araucans called the large toad Genco, or lord of the water[3]. An Aymara tribe in the mountains above Juli, opposite to

[1] In the top of the stone idol there is a hole, evidently intended for the insertion of the usual plume. One antiquary, puzzled by this, considers that the offerings were planted in this hole!

[2] Sahagun, Lib. I. ch. II.

[3] Molina, English translation, vol. i. p. 179.

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Titicaca, worshipped as their food-god (dios de las comidas) a double human idol having a hood in the form of a toad: this creature was also an object of direct worship throughout the Collao [1]. Some tribes on the Orinoco worshipped the toad in order to obtain rain or fair weather: if their requests were not complied with, the poor animals were severely beaten [2]. It was in the advanced district of New Granada, where no useful animal whatever, and no other innoxious quadruped than the toad, was known, that its worship attained the greatest development. The toad of the Chibchas, whether in the act of jumping or fully extended, the toad with or without limbs, the toad with a tail, two toads conjoined, have each received some appropriate explanation from the Colombian antiquaries [3]. It suffices for our purpose to observe that here, as elsewhere, this animal was the symbol of the rain-spirit: its cry, heard in each spring, summoned the Indians to the planting of the maize. It is certain that precisely the same form of fetishism once prevailed among advanced agricultural peoples in the Old World: it must suffice to refer to a single authority. To obtain favourable weather for the crops the Roman farmer was advised to bury in the middle of the cornfield a toad enclosed in an earthen pot; a toad carried round the millet-patch before weeding, and then similarly buried in its midst, defended the plants from the worm and kept off the birds: a toad suspended by his hind-legs from the lintel of the granary was considered to protect the hoard of corn from weevil and mowburn [4]. That which in Mexico at the conquest, was an important part of the established religion, had in Rome of the emperors long since become a mere rustic superstition.

'Rest' of the food-gods.

We reserve for another place the discussion of certain other forms of maize-worship in Mexico [5]—of the iztac-

[1] Calancha, Cronica Moralizada, vol. ii. p. 9 verso, p. 13. Arriaga, p. 57.

[2] De Pons, Voyage à la Terre-Firme, vol. i. p. 289.

[3] Duquesne, Calendario Chibcha (1795), in Acosta's Compendio Historico del Desc. y Colon. de la Nueva Granada: Humboldt, Vues des Cordillères, vol. ii.

[4] Pliny, Nat. Hist., Lib. xviii. ch. 17, 29, 30.

[5] The general name of the maize-gods was Centeotl = *Centli* (1, fruits in

centeotl, or goddess of the white maize, to whom none but pale, disease-stricken victims were sacrificed; of the *tlatlauhquicenteotl*, or goddess of red maize; and of the male *centeotl*, the son and representative of the Earth-mother. Before passing on, however, to consider the worship of the greater objects and forces of Nature as developed under the influence of agriculture, it may be proper to mention some other instances of the survival in advanced religions of strictly fetishist ideas in connection with the corn-spirit and the rain-spirits, and the alimentary products due to their influence. Among these, the most interesting, from the light which it throws both upon the history of advancement and upon early conceptions of natural forces, is the Mexican practice of periodically giving the food-spirits a 'rest' or repose, in order that their energies might not be worn out. It has been already said that man is perplexed by the diminishing fertility of the earth under cultivation. Pastoral races have attributed this to the fact that their own gods or great spirits, unfavourable to agriculture, had pronounced a curse upon the soil, which prevented it from yielding its increase, and caused it to produce thorns and thistles instead. The ancient Persians, as will presently be shown, thought that the growth of corn was impeded by malevolent spirits. The Hindus considered that the earth resented as an outrage the continual trampling of the labouring oxen and the painful scarification of the iron ploughshare. In Mexico it was thought that artificial food-production tended to induce a senile marasmus in nature. The vigour of the maize-spirit was impaired not only by the continual drain upon its product for man's subsistence, but by the processes of preparing this product for food. The rain-spirits shared in this enfeeblement: and by way of giving repose to both, there was held in Mexico, every eight years, a festival called the *atamalqualiztli*, or 'fast of porridge-balls and water [1],' the

general, cp. note 1, p. 379 ante. 2, the ear of maize, the fruit by excellence) + *teotl*. The name was usually connected with *Tzinteotl* = 'god of origin or foundation' (*tzintli* + teotl), a translation of the name given to the Maize-goddess by the Totonacs, and exactly equivalent to the Peruvian Ticsi-huiracocha.

[1] Or, perhaps, 'fast of water-porridge-balls.'

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essence of which consisted in every one abandoning for a time the advanced basis of life, and recurring, by way of change, to the conditions of savagery. Most of the so-called pleasures of man, even in his highest state of civilisation, are connected with some temporary relapse into the conditions and pursuits of lower grades of advancement[1]; it was a perfect orgy of delight for the Mexican peasantry to imitate for a time, in the closest possible manner, the savages of the forest. Such imitation necessarily became a caricature. They danced round the teocalli of the Tezcucan Tlaloc, which stood in the midst of that great collection of shrine-mounds and apartments used for religious purposes, which the Spaniards called the Great Temple of Mexico, fantastically masked as quadrupeds, birds, butterflies, beetles, flies, and bees, howling, gibbering, shrieking and buzzing, in imitation of the various creatures which they emulated. The object of this ceremony was to refresh and delight the rain-god, fatigued and exhausted with producing the showers which had watered their maize and beans. They ate some of these creatures, not only uncooked, but alive, with shouts of delight. The officials filled one of the numerous pools or basins of water within the temple precincts with frogs and harmless water-snakes; these the people vied with each other in catching and eating alive, without touching them with their hands. The ostensible reason of this quaint revelry was 'to let the foods rest' (those, that is to say, which were artificially produced). No food of cultivation was permitted except *atamalli*, or water-porridge, a preparation of maize made in the simplest manner, with no admixture of salt, lime, or nitrates: these substances, they said, fatigued the maize-spirit, and made it grow old: the object of this temporary abstinence was to make it young again. No festival was more popular: the epochs of eight years, at which it recurred, were eagerly anticipated: at each one the old

[1] E.g. obsolete modes of food-provision (shooting and fishing), of locomotion (boating, coaching, &c.), of defence (fencing, boxing, &c.), of religious ceremony (dancing, masking, conjuring, &c.), picnicking and camping-out, and wandering from place to place generally by way of obtaining change of food and scene.

women lamented, weeping and howling, that they would probably never see another [1].

Old age of the gods.

This idea, so strange to ourselves, of the enfeeblement of the gods and spirits by age, of the gradual decay of their powers, common, perhaps, to all primitive theologies, largely underlies those of the New World. The gods of these archaic peoples are unlike the immortal gods of Greece, or the Eternal Being of Israel: they are liable, like men, to death by starvation, to extinction by old age. Tetzcatlipoca alone among the Mexican gods is credited with perpetual juvenility by the conditions of his nature; in the case of Huitzilopochtli, the national god of the Aztecs, and his younger brother, Cuexcotzin, old age must be averted by making new images of them each year, carefully moulded of the cooked paste of maize, mingled with the blood of sacrifices. The intention of these singular effigies was to warn the gods to renew their vitality: to remind them of the human blood which had been shed for their nourishment, to urge them to the performance of their part in the contract or covenant between the gods and their worshippers. A similar practice obtained in the worship of the Tlaloquê. The cultivator, who desired to induce these gods to shower down rain upon his crops, employed some skilled modeller of these paste idols to make an image of the Tlaloc who dwelt on the principal mountain of the district. To this image the prescribed offerings of porridge and pulque were duly made, and with the view of rousing the deity, thus newly constituted and established, to new life and activity, the worshipper and his friends then watched or 'waked' him, throughout the night, dancing, howling and shrieking. In this function they were assisted by hired musicians, who kept up an incessant whistling by means of pipes of bone and wood [2], and of sea-shells, or by putting the fingers between the lips. Considerable fatigue was produced by the performance of these rites: the next day was occupied in drinking

[1] Sahagun, Lib. ii. Appendix.

[2] The shin-bone of man is the favourite musical instrument of anthropophagous peoples. At the cannibal feasts of Mexico the entrails were assigned as the portion of the musicians.

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pulque by way of refreshment. The gods of Peru are essentially mortal: they are only kept alive by the steam and blood of the sacrifices, and would undoubtedly grow old but for the solemn prayers, regularly addressed to them, to remain young, in order that food-production may continue, and that men and animals, their children and creatures, may not starve. Such prayers formed an important part, perhaps the most important, of each of the two great feasts, the Intip Raymi and the Ccapac Raymi[1]. The former was commenced by placing the three great images of the Creator, the Sun, and the Thunder (rain-god), on a stone bench; the llamas destined for sacrifice were led round them, while the guardians of these gods besought them, in the prescribed formula, to remain always young, and not to grow old, in order that the people might eat and drink. A similar formula was sung by the Inca chiefs, at the early sacrifice to the great huaca of Huanacauri, walking in procession round the burning carcase of the llama, and plucking the wool, in order to blow it into the air as a personal offering from each. Similar ceremonies were performed in the Ccapac Raymi. 'Renew thy vitality, my huiracocha[2],' was a formula commonly used in the prayers addressed to the greater gods individually.

Drink-gods of Mexico.

Yet one more illustration may be given, before passing on, of these simple forms of fetishism. Allusion has been made to the importance of fermented liquors in the early stages of advancement, and to the difficulty of restraining the use of intoxicants within due bounds. With low peoples, in fact, abstinence is the only security against debauchery. In Mexico, the warriors were theoretically abstainers, and indulgence in intoxicating liquor was supposed to be confined to the peasantry, its use being limited by restrictive regulations. How far these were observed it is not easy to determine: it may throw some light on the question if the place of intoxication in the Mexican theory of things is briefly explained. The state of drunkenness, then, like

[1] Ante. p. 349.

[2] 'CAUSAY MUSUC,
HUIRACOCHAY
(Literally, 'Live anew!')

other pathological states, was considered by the Mexicans to be merely a state of possession by a god or spirit; in this case by a strong spirit or god, who dwelt in all strong drink. When, in the course of drinking, a man was seized with vertigo and sickness, and lost all self-control, this was considered to be the visitation of the god, not the fault of the man. It followed that if in the drunken fit the subject of this visitation did violence to himself or others, he was not to blame: he was the mere vehicle of the god's action. Such acts were not viewed as crimes, but only as misfortunes; and it was considered certain that some such misfortune would happen if, during the incipient stage of intoxication, any one spoke ill either of the liquor or of the drunkard himself. As violent acts committed during drunkenness were not punishable, an Indian who was minded to commit a crime sometimes made himself drunk in order to do so with impunity. Sacrifices and prayers had to be made to the drink-gods to avert these injurious forms of possession: the plurality of the drink-gods was due in some measure to the plurality of these forms. The common form under which the drink-god was worshipped was the rabbit (*ome-tochtli*, = two-rabbit), this animal being considered to be utterly devoid of sense. When an Indian desired to drink deeply without losing his senses, he accordingly repaired to the Tochinco; if several persons wished to make similar offerings simultaneously, they visited the larger Centzontotochtin-teopan, where the rabbit-god was worshipped in the highest degree of plurality commonly calculated, namely, the round number four hundred[1]. In this teopan, moreover, any one who desired to avoid committing suicide by hanging or drowning might sacrifice to Tequechmecaniani (drink-god who hangs people) or to Teatlahuiani (drink-god who drowns), as the case might be; if, however, he merely apprehended a headache or a state of bodily collapse, he offered to Quatlapanqui (the head-

[1] Twenty times twenty (the invariable round number of savages): used in a similar way to our 'thousand.' Twenty times 400, or 8000, was the next great round number, corresponding to the 'myriad' of the decimal system (cp. note 1, p. 381. The name does not imply that 400 drink-gods were actually housed in the teopan: it merely denotes a large number.

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splitter) or to Pāpaztac (the nerveless, impotent one). The humbler class, to which, as has been shown, the votaries of the drink-gods for the most part belonged, found in this teopan an *ome-tochtli* specially consecrated to the protection of the followers of each particular calling. The coppersmith, the mason, the plebeian squire or shield-bearer of the warrior, the simple peasant, each found here an image representing the drink-god as a protector of those engaged in the trade they respectively practised; and by making due offerings to him they were enabled to enjoy the mental exaltation of pulque without fear of deleterious consequences [1].

Worship of the Elements.

Let it not be supposed that the fetishism of nature, so prominent in the theology of the savage and the barbarian, is exhausted by such puerile conceptions as those above described; on the contrary, it embraces others which amaze us by their breadth and dignity. The physical doctrine of the four elements, which sufficed for Aristotle, Bacon, and Newton, and was only superseded in the days of our grandfathers [2], is neither more nor less than an ancient dogma which is common to all primitive theology; before these mighty fetishes, Earth, Air, Fire, and Water, the greatest intellects the world has known have bowed, as humbly and as trustfully as the lowest of savages. The Peruvians, says Garcilasso [3], worshipped the Earth, or mother-soil, because it yielded them subsistence; the Air, because without it they could not breathe; and Fire, because it served to warm them, and to prepare their food. Water, in all its forms, was an object of profound veneration. Springs and rivers were worshipped for their utility in daily life, and in a special sense by the cultivator, on account of their use in irrigation; lakes were worshipped for the fish, aquatic

[1] Sahagun, Lib. I. cap. 22. There was one special *ome-tochtli* for those of the warrior or upper class (*colhuatzincatl* = 'he who has grand-parents').

[2] 'The four-element theory was universally accepted during the Middle Ages, and was only disproved a century ago, when air was proved to be a mixture of two gases, water a combination of two gases, fire the result of intense chemical action, and earth a mixture of some dozens of elementary bodies, some combined, some single.' (G. F. Rodwell, The Birth of Chemistry, 1874, p. 27.)

[3] Lib. 1, ch. 10.

birds, and useful vegetation found in connection with them[1]; and it is natural to find that the principal advanced tribes in whose scheme of alimentation fish had a place of importance, the Peruvians of the coast, regarded the Ocean as the most powerful of the gods, calling it *mamacocha*, or mother-sea. Of the four elements, Water and Earth are, from the primitive point of view the most important, and probably embody the physical creed of the earliest men: Air and Fire, it may be assumed, were added later. When we advance a step, and regard the elements from the point of view of the primitive cultivator, it is found that Water and Earth still remain pre-eminent in importance: for a running stream and cultivable soil, the latter affording supplies of stone suitable for buildings and implements, are the first essentials of permanent settlements. The Mexican word for 'village' or 'pueblo' (*altepetl*) means 'water and mountain[2]'; a place, that is, in an elevated situation, where water is abundant, and these elementary requirements are therefore satisfied.

Covenant of the Gods.

For the purpose of discussing this fetishism of the elements, it becomes necessary to define the second of the great changes which appear to have transformed human society; to note the second of the great landmarks which indicate the path by which man has advanced from savagery to civilisation. The first of these changes has been described as the substitution of an artificial for a natural basis of subsistence[3]: the second consists in the substantial recognition of those benevolent beings on whose co-operation the maintenance of this artificial basis has been found by experience to depend, on the principles already indicated in our previous pages[4]. Briefly, it is THE ESTABLISHMENT OF THE GODS AS THE PRINCIPAL MEMBERS OF THE COMMUNITY. They are not recognised, be it observed, as beings external to it.

[1] Ante, pp. 296, 297.

[2] *Altepetl*, as Buschmann (Azt. Ortsnamen, p. 33) rightly points out, is not a compound, but a simple agglutination, of *atl* and *tepetl*: hence *ahua tepehua* (inhabitant) = 'one who possesses water and mountain.' So *ccollahui* (= 'cultivated land,' ante, p. 297) appears to mean primarily 'mountain land.'

[3] Ante, p. 276.

[4] Ante, pp. 395–398.

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They are in it and of it; they are its most important members [1]. They are bound to their human neighbours by mutual obligations. It is the contract or covenant between them and man, at first recognised as existing merely by implication, more clearly defined as society takes its definite shape, which first gives to society coherence and stability. Civilisation is founded on this COVENANT OF THE GODS AND MAN, that is to say, on religion: to distinguish it from a later covenant, which in after times robs this primitive covenant of most of its importance, we will call it simply the Covenant of the Gods. Like all others, this covenant imports mutual services: DO UT DES, FACIO UT FACIAS. Food and drink, health, success in war, the prolongation of the life of the individual to its normal span, the continuance of the family, of the tribe, of the nation, from generation to generation, these are the stipulations on the part of man. What is stipulated for on the part of the gods, acting by their duly authorised agents, may be summed up in a single word, namely, sacrifice. This expression denotes in substance the same benefits, subject to such modifications as are required by the circumstances of the beings by whom they are to be received, as the covenant secures to the other party bound by it. Food and drink are the materials of sacrifice. Health, so far as this is an attribute of the gods, is secured by the continuance and abundance of the sacrifices: the prolongation of their life, the warding off of old age, is secured by the same means, with the aid of certain ceremonies to which reference has already been made [2]. Success in war, however, is a human benefit as to which there is no reciprocity. Though the conflict of malevolent and benevolent spirits, of the principles of good and evil, is an elementary human

[1] Originally the gods, like men, were merely members of a class—of the general body of invisible agents who share the world with man (ante, p. 397). It is difficult at first to realise, but it is nevertheless the fact, that the inhabitants of small districts seriously supposed that the spirits of the sun, moon, stars, and thunder could be embodied in idols like their own private and tribal gods, and, like the latter, be constituted members of the community. The difficulty disappears when it is remembered that the only portion of the earth originally known to each tribe was the little canton which it occupied (ante, p. 334).

[2] Ante, pp. 429, 430.

conception, it is only occasionally that fully-developed gods are conceived as making war among themselves. When this happens, man must leave them to fight it out: obviously all that he can do is to sacrifice only to those whose success he considers to make for his own advantage. In addition to the above-named benefits, man demands of the gods, as has already been noticed[1], advice in regard to the affairs and events of life: a demand based on the fact that foreknowledge in regard to these affairs and events, denied by the scheme of nature to himself, is their natural and universal attribute. Thus far the balance of advantage is clearly on the side of man. He seeks to redress this balance by including in his offerings to the gods, besides food and drink, portions of all that he regards as desirable and valuable. Fermented liquors are made for them of unusual strength[2]: the best leaves of coca and tobacco are reserved for them: fragrant woods and gums, and brilliant feathers are burned to give them pleasure: the finest cotton and woollen stuffs are not only employed in their clothing, but are lavishly burnt in their sacrifices. Lastly, the precious metals are used in their service. Symbolic offerings of gold and silver are placed before them: their food-dishes and drinking-cups[3], and at length their images, are made of the same materials: their apartments are even lined with plates of gold, beaten out to the thickness of a leaf. In Peru, the common name for the great houses of the gods was *ccoricancha*, or 'enclosure of gold.'

Identity of the Covenant of the Gods at different stages of history.

The terms above-mentioned embody the Covenant of the Gods at an advanced stage of history, when gods not hitherto mentioned, the great gods of the heavens, have not only been brought within its purview, but have largely displaced and reduced to comparative insignificance the multitude of private and tribal gods, gods of the earth, with the recog-

[1] Ante, p. 398.

[2] Ante, p. 364, note 2.

[3] On the sacred plate of the gods of Peru see Arriaga, p. 92. Chicha was poured into the mouth of the image by means of a vessel resembling a tea-kettle, often having two spouts (*tincurpa*). Several of these, made of pottery, are in the British Museum: those of gold and silver have been for the most part melted down.

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nition of whom the covenant originated. But the terms of it are little altered: they remain substantially the same from first to last. Food is always the most important among the benefits which are mutually secured by it: indispensable to man, food is equally so to the gods, and that in all stages of advancement. As has been already remarked, the ultimate element of all wealth is food. The wealth produced by the common enterprise must be fairly divided. The Otomi hunter offers the blood of the deer to the little image, which he keeps in his hut, of the Cloud-serpent (Mixcohuatl) who has led him to his game, and guided the arrow by which he has slain it. The Nicaraguan secures the future favour of his deer and rabbit gods by hanging before their images clotted blood wrapped in a cloth. It is on precisely the same principle that the Mexicans kept their great war-gods, Huitzilopochtli and Cuexcotzin, by whose favour they maintained their sway over the vassals who loaded their storehouses with tribute, alive and vigorous by the blood of young human victims selected from their tributaries, and the Peruvians maintained the Creator, Sun, Moon, and Thunder, on whose favour their crops depended, in youth and vigour, by the continual smoke of burnt llamas. It is only on a superficial view that the latter sacrifices seem more preposterous than the former. If the propriety of the sacrifices of the hunter be once granted, those of the cultivator follow as a matter of course. In these stages of advancement man does not err for want of the power of reasoning: he rather errs through excess of logic, tenaciously adhering, as he does, to the primitive theory of things which has descended to him.

Economic effect of the Covenant of the Gods.

Why the Covenant of the Gods gives to human society coherence and stability is easily explained. Examined closely, it is clear that this covenant establishes a partnership, between the gods on the one part, and man on the other, in each of the economic processes which the latter carries on. In the full belief that these powerful beings, a group partly consisting of the actual spirits or forces of nature, partly of others which stimulate or control these forces, are actively at work on their part, the energy of man

is redoubled, the produce of his industry is increased manifold. Of this produce a certain part is assigned as the share of the gods, to be duly consumed in their sacrifices. This, however, is not all. As the gods of wandering peoples must have their own tents, made in the prescribed form, of the most costly materials, and richly furnished, so those of agricultural peoples must have their own houses, their own plantations of roots or corn[1], their own predial and domestic servants. The gods of Peru had their own herds of llamas and pacos, whose flesh was in great part consumed on their altars, while the wool was spun and woven into cloth. The finest cloths were used in providing raiment for the images of the gods, the residue being taken for the use of those who served them, or burnt in sacrifice. It is easy to see how large are the drafts which are thus made upon the great bank of civilisation, the labour of man. Great are the consequences of trifles: puerile as these conceptions may appear to us, it is by acting upon them that man has thrown open that inexhaustible treasury, the capacity of the human species, duly organised and furnished with an adequate motive, for continuous production. This consideration may be usefully carried a step further. The establishment of these beings as virtual members of the community, having claims which its real members are bound, in their own interests, to satisfy by strenuously putting forth their united labour, introduces into society, or, at least, greatly increases, the force and tension which come of cooperation. Nor is this all. This common exertion of labour in the common interest is accompanied by periodical participation in common rites; by the transfer to and association with these rites of whatever in life is gay and pleasurable, of feasting and drinking, of mirth and song, of lively sound and brilliant colour, of mask and

[1] Cp. ante, pp. 396, 398. The assignment of land, with its produce, to the gods is no voluntary fancy: it is forced upon early cultivators by their theory of things. Thus, according to Gumilla, a tribe of the Guayanos, in consternation at an eclipse of the moon, set to work and prepared a plantation for the moon-spirit. They considered the eclipse to be a manifestation of the moon's displeasure at their omission to provide it with a separate field of manioc or maize (Orinoco Ilustrado, vol. ii. p. 278).

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dance, and revelry. Life, it is evident, has been transformed, if not elevated. It has been rendered easier, more secure, more delightful: it has acquired a new meaning, assumed a new dignity. The transformation has been effected by agriculture. Religion extends it, multiplies the force which has effected it, and secures the continuance of the blessings which accompany it, not only to the generations of the time being, but to those which are to follow. Men think of their descendants: they look back to their ancestors.

Worship of the Dead.

Before proceeding with the discussion of the worship of the greater objects and forces of nature some account must be given of the practice, universal in the early stages of advancement, of rendering to the distinguished dead of the tribe services similar, or nearly so, to those which are rendered to the gods. That human beings become spirits after death is a doctrine almost universally accepted in early times: the host of invisible beings who share the world with men is thus continually recruited. Those who have held a distinguished rank in the tribe when living are recognised as a secondary species of gods. So general is this practice, in late savagery and throughout barbarism, and so prominent in the world of spirits and gods are the distinguished dead, that some have even thought that all religion has been developed from the worship of spirits of this class [1]. Impossible though it is to accept this view, in the sense in which it is put forth, it does not greatly exaggerate the importance of the rank which in the higher grades of savagery and lower ones of barbarism is assigned to those spirits who were once distinguished members of the tribe. These are universally considered to remain members of

[1] 'A demortuorum memoria idolorum cultum fluxisse passim indicatur' (Selden, De Dîs Syris, proleg. p. xlii). This view, recently popularized by M. De Coulanges and Mr. Herbert Spencer, is as old as the treatise called the Wisdom of Solomon (ch. xiv.), which Selden adduces as an authority for it, and probably older. The conception of spirits and gods has undoubtedly been modified by the belief that many spirits were once human beings, speculations on the precise nature of the spirits of the dead having tended to change the primitive conception of these invisible agents as substantial beings into the later one of ethereal beings. More than this cannot be conceded.

the community. They have not even quitted it: their bodies, carefully desiccated, sometimes embalmed[1], painted and dressed, are religiously preserved, surrounded with the belongings which surrounded them in life, and periodically supplied with food and drink. At first they continue to inhabit the very houses where once they dwelt: these are henceforth permanently assigned to them. In a later stage they are lodged in dwellings specially constructed for the purpose: the tomb is merely the substitute of the house. Death invests them with a new importance: they are canonized. When food and drink are offered to them, certain formal addresses are made: they are reminded that in consideration of these offerings they are expected to exercise for the benefit of the community, to which they still belong, that beneficent activity which characterises the class of beings into which they have been admitted. To the hunter and the fisher, the spirits of the dead, thus duly worshipped and invoked, appear in dreams: they tell him when and where to seek his game, with what tribe to contract alliance or make war, warn him of impending danger, direct him when and where to attack his foe. They also warn him when the time has come to shift the settlement to some other place: when this happens, the bones of the distinguished dead are carefully disinterred, to be reinterred, and to receive similar honours, in the new settlement[2].

Images of the Dead.

The remains of the dead, unless embalmed with greater art than most aboriginal American peoples could command, are difficult of preservation: ultimately the less distinctive parts are abandoned. The head is longest preserved: placed on a stout cane, or mounted on a carved piece of timber, it serves to represent the deceased long after the rest of his body has perished[3]. But this poor

[1] In Peru, as will presently appear, the practice of embalming was very general. It was effected by filling the body with the powerful gum of an aromatic tree of the Yuncapata (Zarate, Hist. del Peru, ch. 4).

[2] See the description (from Lafitau, Part II, Book vii. ch. 8) in Burke's classical 'Account of the European Settlements in America,' vol. i. Part II, ch. 3.

[3] Hence, possibly, the Quichua word for a dead body preserved for worship, *malqui*, which primarily means 'tree' or 'timber.' The term may, however, merely denote the stiffness of the corpse, saturated with the tenacious gums poured into it.

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relic, preserved and ornamented in various ways[1] and long cherished with affectionate regard, is felt to be an insufficient memorial of the powerful spirit whom it represents. Something replaces it, which is at once more lasting, more like the original, more nearly corresponding to the dignity, the power, and the permanence of the spirit whom it commemorates, and by whom it is still occasionally entered. The timber or cane, supporting the real skull, is exchanged for a symmetrical block of stone, the top of which is carved into the likeness of the human head, often of dimensions greater than human. This augmentation of size is admitted by way of honouring the deceased, of recognising his importance in the spirit-world. Enormous human heads, surmounting a block of stone, or occupying a central position in one of its surfaces, are found from Mexico to Bolivia: they invariably denote the distinguished dead, for the gods proper must be represented with all their limbs. The great stone figures of Copan, Nicaragua and Tiahuanaco, are monuments of this class. To such figures we may safely ascribe the fable, so frequently heard among primitive peoples, that the first permanent inhabitants of the earth were giants: they are pointed to as the actual ancestors of the inhabitants.

Huaris and Malquis of Peru.

Of this proposition the traditions of Peru afford an approximate demonstration. The Indians of the original or upper group in each pueblo were careful to maintain a strong line of demarcation between themselves, on the one hand, and new-comers from other districts on the other[2].

[1] In Mexico, the skull was usually preserved, sometimes elaborately ornamented (see the rare specimen in the British Museum), often covered with a stone mask (see specimens in the same place). In some parts of the Yuncapata, the reverse mode was adopted. The skull being extracted, the skin and flesh of the head, dried by some appropriate process, retained the shape of the features, though shrunk to extremely small proportions (Zarate, Hist. del Peru, ch. 4). This practice still survives among the Jivarro Indians of Ecuador. The diminutive heads which can be sometimes procured from these Indians, exactly answering to Zarate's description, have a strange effect, arising from the fact that the coarse hair, which, of course, remains unshrunk, is disproportionately thick and copious, and has an unnatural appearance of vitality.

[2] Each pueblo of Peru was divided into two parts: the *hanan-suyu* or upper village, the *lurin* or *hurin-suyu*, the lower. The inhabitants of the former

The latter they called *llacuas*, or 'parasites': they denominated themselves *huaris*, 'great ones' or 'giants.' This is precisely the word used to denote the great stone figures which have been described, figures which they indicated as the original colonists of the country, the founders of the pueblo, their own actual ancestors. The main distinction between the two groups of villagers, the members of which did not intermarry, was that the former had a local paccarisca and stone ancestors, as well as *malquis* or actual mummies of the more recent dead; the latter had nothing to show by way of ancestors but *malquis*. The former were said to 'have many huacas,' while the latter, who were rigorously denied the right of sacrificing to the paccarisca and great idols of the village, had but few. These social and religious disabilities engendered bitterness on the part of the lower group, or plebs, which the upper group were not slow to reciprocate. The emissaries of the Church utilised this mutual jealousy in pursuing the difficult task of compelling the Indians to disclose their objects of worship: the members of each group willingly indicated the huacas of the other [1].

Spirits of the Dead and Agriculture.

The importance of the spirits of the distinguished dead, already recognised by hunter tribes, is increased in the early stages of agriculture. To them the agricultural life owes its establishment: they have conducted the tribe to its settlement, discovered the alimentary plants which it cultivates, taught the art of preparing foods and beverages. Many of them have obtained distinctive names: these are the doubtful personages who have been denominated 'Culture-heroes,' who will be considered in those parts of the present book which relate to the separate advanced districts. They still have the settlement under their protection. They counteract the assaults made on the young plant by the evil spirits, ever hostile to agriculture; their activity promotes its growth. 'The good, strong, beneficent spirits (Fravashis) of the faithful,' says the Farvardîn Yast, 'show a beautiful growth to the fertile plants which

were the *huaris*, answering to the populus of the Latin towns: those of the latter were the plebs. Hence Hanan-Cuzco, Hurin-Cuzco, &c.

[1] Arriaga, pp. 88, 89.

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had stood before a long time in the same place without growing . . . and now they grow up along the path made by Mazda [1], &c.' So in Peru, the *huaris* made the corn to grow, and were therefore solemnly invoked in cultivating the chacras. The like was done in building walls or houses. Being giants, these beings naturally possessed great physical force: they were called the 'gods of strength.' Chicha was poured on the soil of the chacra at the commencement of cultivation, as an offering to the *huaris* [2], who had been the first [3] to reduce it to tilth. This, however, was but a trifle compared with the burden imposed by custom upon each household, of regularly offering food and drink at the tombs of its deceased members and of all its ancestors within the ayllu. For the purpose of providing these offerings more and more land must have been brought under cultivation, more and more labour annually expended. Through the worship of ancestors, as through that of the gods, larger demands are made upon human labour: the individual is compelled to produce an ever-increasing surplus of food above what is required for the consumption of his family.

Breach of the Covenant of the Gods.

In these circumstances every calamity which befalls man is ascribed to some breach on his part of this covenant with the gods. The temptation to defraud them of their due is a strong one: often it is irresistible. The rich herdsman is less exposed to it than the cultivator: often the latter must deny himself what is necessary to his sustenance, in order that the gods may be fully satisfied. But the gods inexorably demand their due: if this be withheld, the defaulter is punished accordingly. His crops fail: his hoards decay: he is stricken with disease. For the huaca whom he has defrauded will visit his offence through a malevolent spirit, which lies in wait at the very door of his hut, to seize upon him as he passes through. It is only by ample reparation in sacrificing to the power whom he has defrauded, that he can escape its attack. Such were thought to be the consequences of *hucha* or sin, in Peru: when any general

[1] Zend Avesta, tr. Darmsteter, vol. ii. pp. 193, 194.
[2] Arriaga, pp. 11, 12. [3] Id. p. 50.

calamity occurred, the members of the community were rigorously examined, until the sinner was discovered and compelled to make reparation. The conception of sin or trespass, here brought to our notice, precisely equivalent to the *Khêt* and *Khattâth* of the Hebrews, seems in both cases to have originally denoted a breach of the implied contract between man and the powers on whom he is dependent, by failure, whether intentional or otherwise, to render them their due in sacrifice[1]. The further development of this subject belongs to the special theology of Peru: it has only been necessary to mention it in this place because running water is the agent which is resorted to for expelling and carrying off the spirits of disease, and for carrying away, by an appropriate symbol, the offence of which their attacks are the consequence. Similar conceptions are so widely spread in the Old World, that to refer to them can hardly be necessary.

Worship of running Water—Wells or Springs.

No form of natural fetishism is more widely diffused, none lives longer, in the midst of more advanced forms of religion, than the worship of wells or springs. Christianity has not banished this popular superstition: a saint has nominally replaced the spirit of the spring[2]. It was the same with the latest Hebrew religion: the Semitic tribes, as is proved by the numerous wells of the Lebanon, enshrined in ruined temples, were extremely addicted to well-worship. Embedded in the Law of Moses itself we possess a curious and authentic relic of this early Semitic fetishism of nature, in the form of a song which was still sung by the Hebrews

[1] *Hucha* is certainly connected with *huchuy* = small. *Huchuychan* = 'he diminishes'; this is precisely the verb חטא, khâtâ = he diminishes, takes away (used in the primitive sense in Levit. v. 16, חטא מן־הקדש = 'to take away from the holy thing'). The offence of Cain would appear to have consisted in the insufficient quantity of his sacrifice. 'Wherefore dost thou glow, and wherefore is thy face fallen? Is it not thus? If thou mendest, there is forbearance: and if thou dost not mend, sin (khattâth) croucheth at the entrance, and unto thee is its longing! Nevertheless, thou mayest subdue it' (Gen. iv. 6, 7; cp. the LXX).

[2] In the twelfth century, well-worship was openly practised within thirty miles of London, at certain places on the great highways which led from the capital through the forest of Chiltern (Vita Sancti Hugonis, Ep. Linc. p. 348). Celtic blood probably predominated at this date in the inhabitants. The Celts are great well-worshippers: the worship of wells, thinly disguised, for the cure of disease, is still practised in Ireland and Brittany.

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in comparatively late times to the 'Well of the Chiefs,' in the land of the Amorites [1]. The ceremony of visiting and drawing water from Siloam, a part of the prescribed observances of the Feast of Tabernacles, like the extraordinary nocturnal orgy called the 'rejoicing for the pouring out of water,' kept up on each night of that feast, which has so greatly exercised Jewish antiquaries, is beyond reasonable doubt a remnant of well-worship, incorporated into the ritual of a later religion. Similarly, well-worship was practised, at the Conquest, in the midst of the great religious enclosure of Mexico, side by side with rites of a far different kind, paid to gods of a more advanced type, for whose service the water of the wells was in like manner utilised. Within this enclosure there were several celebrated springs: the Tlilapan [2], or Place of Black Water, where a deep reservoir had been formed in which the officials of the gods bathed themselves; the Tezcaapan [3], or Place of the Water-Mirror, which had been similarly treated, and served as the bath in which those chiefs who did official penance, that is, who served the gods by performing the ordinary duties of the teocalli for a year or a less period, bathed themselves, or, in a familiar phrase conveying a precisely similar idea, were baptized, before their penitential services were commenced; Coaapan [4], or Place of the Water of the Serpent, the private bathing-place of the officials of the Coatlan; the Ezapan [5], or Place of the Bloody Water, where the worshippers washed their wounds, after drawing their blood with the aloe-thorn; and lastly the Tozpalatl [6], or Black Water of the Parrot, not used as a bath, but as a

[1] (Probably the Beêr Elîm of Isaiah, ch. xv, v. 8.) Numbers, ch. xxi, v. 18:

'Spring up, O well!
Sing ye unto it!
"This well, the chiefs digged it,
The nobles of the people digged it out,
By command of the Leader, with their staves!"'

Diseases were healed by the spirit of the well of Bethesda (S. John, v. 7): probably a similar virtue was attributed to Siloam (Id. ix. 7).

[2] *Tliltic + atl + pan*: the name merely indicates darkness derived from depth.

[3] *Tezcatl + atl + pan.*

[4] *Coatl + atl + pan.*

[5] *Eztli + atl + pan.*

[6] *Toztli + palli + atl.*

well of drinking water, by all officials of the gods. At the principal religious festivals, especially the great feast of Huitzilopochtli, the Well of the Parrot was worshipped with extreme devotion, by all the people [1]. The worship of wells was universal in Peru: its principal object, as was doubtless the case with the wells of Syria, was that the springs might not dry up. Greater huacas sometimes entered into the wells, in order to avail themselves of the voice of their waters [2], when they desired to make communications to their worshippers. Thus, the spirit of the Sun itself entered into a well near Cuzco, for the purpose of addressing the youth who afterwards became the Apu-Ccapac-Inca Pacha-cutic, and revealing to him the form under which the sun was to be worshipped [3]. Certain springs were assigned as places for ablution after performing funeral rites [4].

Spirits of Wells and Rivers counteract disease.

One important function of the spirits who dwell in running water has been already alluded to: they counteract the seizure of the patient's body by those malevolent spirits who cause disease. The intertropical mountain districts are naturally among the healthiest places in the world: in the deep, warm valleys of Peru fevers and agues appear when the rainy season commences, and other maladies, originating in the same places, are sometimes carried to the highlands. It was at the beginning of the rainy season that the Ccapac-Situa, or annual expulsion of the disease-giving spirits, took place: driven with shouts and brandishing of lances, into the four gorges which enclosed the district of Cuzco, they were supposed to be then and there seized by the spirits of the rivers, and carried away bodily into the ocean. The next day, the whole people, the Apu-Ccapac-Inca himself beginning the

[1] Sahagun, Appendix to Lib. 2. The name Mexico (Otomi) is derived from the pools mentioned in the text. Another pool seems to have been enclosed in the place called *Aticpac* (='On the surface of the water'), sacred to the Cihuapipiltin, or spirits of women who died in their first child-bed; these were supposed to wander in the air, with pallid faces, inflicting disease.

[2] See post, p. 448.

[3] Molina, ap. Markham, Rites and Laws of the Incas, p. 12.

[4] Arriaga, p. 50. In others maize was steeped before planting it (Id. p. 51).

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ceremony, went before sunrise to the springs and rivers, where they bathed themselves, saying that their maladies would depart from them. Sickness is rare on the plateaux of Peru; in some towns no professor of medicine can earn a livelihood. According to the theory of things which universally attends the establishment of the gods among men, the sicknesses of the latter are attributable to resentment on the part of the former, usually occasioned by some breach of the covenant or understanding established between them. In the old days, when a man was sick, a *huillac* was summoned to prepare flour of maize of many colours, pounded with sea-shells; this mixture the patient blew into the air, as an offering to the *huacas* and *huillcas*[1] generally, including his own remoter ancestors, repeating the while a prescribed prayer for health. He next blew into the air a little coca, as an offering to the sun, moon, and stars, reciting a similar prayer: then he placed a little gold and silver, of small value, before the domestic image of the Creator. The next offering was one of maize-porridge and chicha to the dead. These the sick man placed on their tombs: in the opinion of the huillacs, sickness was in most cases a punishment for the *kucha* or 'sin' of leaving the dead insufficiently supplied with food and drink. The patient then proceeded on foot, if he were able, on a litter, if he were not, to some junction of two rivers[2], where he washed his body with water and flour of white maize, in order that his malady might be carried away by the stream[3]. The ceremony was concluded by

[1] *Huillan*, also *riman*=he speaks: *huacap-huillac*, also *huacahuan rimac* =he who speaks with the huaca: *huillca*=a huaca which is spoken with, an oracle.

[2] The junction of two rivers appears to have been preferred for the simple reason that two spirits or gods are more powerful than one.

[3] Mr. Sayce (Hibbert Lectures, 1887, p. 303) gives a Babylonian prayer used on similar occasions by patients bathing in the Euphrates:

'O mighty river, river supreme of limb,
Grant me to bathe in the straight course of thy waters,
The (disease) which is in my body, to thy channel carry it,
Take it, bear it down the stream.

. . . . . .

Save me from the venom of these serpents,
May they depart.'

the *huchoco*, or confession to the huillac of the patient's sins: he was warned that if he would be cured he must confess them all. During the confession, the huillac held in his right hand a bunch of mountain-grass: when it was concluded, he administered light blows between the patient's shoulders with a stone[*]. This symbolic punishment being concluded, the patient spat into the bunch of grass. The huillac did the same, and threw it into the river, with a prayer to the god that it might be carried away, together with the sins of the patient, by the current, and hidden for ever[2].

Worship of Rivers—Oracles.

Streams, in their higher courses, where they are violent and boisterous, possess a special importance in connexion with another aspect of primitive religion, which has already been cursorily noticed[3]. The gods, as we have seen, have imposed upon them, by the covenant between them and man, the duty of advising him with regard to the affairs of life. Most objects of worship can only be made to speak audibly by means of some species of jugglery: unless this is resorted to, the votary either takes the word of the *huillac*, the official or professional person who acts as his intermediary with the gods, that the gods have in fact returned an answer to his enquiries, or, which is more common, accepts the utterances of this intermediary agent, given under the temporary inspiration of a powerful dose of narcotics or of strong liquor, as those of the god himself. Some, however, of the objects of worship have received from nature the power of speech. The most prominent among these are the serpent, the tree, and the fountain or torrent[4]. The hissing of the snake, the

Though I venture to substitute 'disease' for 'impurity,' Mr. Sayce's filling-up of the verbal lacuna, the two ideas are nearly connected. The suggested change gives meaning to the embodiment of the disease-spirits as venomous serpents; these would be precisely the 'burning serpents' (Numb. xxi. 6), spirits of the epidemic (of fever) among Israel in the desert, which was assigned as the occasion of making the serpent of copper kept in the temple, down to the time of Hezekiah, probably as a fetish for the use of fever-stricken patients.

[1] Ante, p. 410.

[2] Relacion Anonima, pp. 165–169: the ceremony is also described by Calancha, vol. i. p. 378.

[3] Ante, p. 398.

[4] Air in the form of wind, which is always intended when air is mentioned

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rustling of the leaves, the creaking of the bough[1], the babbling of the well, the noisy dashing of the torrent, are all in the ear of the savage so many voices, more or less articulate, in which spirits or gods reveal to man some secret which it highly imports him to know. The river is in a higher degree than any other speaking fetish or oracle an embodiment of will, of force, of permanence. It has some of the qualities of a fierce fetish animal: it devours sacrifices thrown into it, it slays man himself. Unlike most other objects of worship, it visibly renews its vitality. Its force and volume may periodically decrease, but they are periodically restored after the season of rain. Men come and go; but the torrent rushes on for ever. River oracles belong to the very earliest periods of human history. They are usually confined to mountainous districts: the majestic stream of the lowlands, comparatively noiseless, seldom appears as an oracle. Some peoples on the Niger, however, consult the river as an oracle on important occasions. When the Landers were descending this river in 1830, the king of Boossa refused to allow them to proceed until he had consulted the 'black water' on the subject through the proper official: a timely present secured for the travellers a favourable answer[2]. Nowhere, probably, were river-oracles more numerous than in the Andes. Each of the two great streams which dash through the rocky gorges bounding the district of Cuzco on the north and south, was a celebrated *huillca*[3]. Another

in primitive language, and fire, are also speaking fetishes. Sometimes these speaking fetishes are combined, as in the case of the tree, blazing with fire but unconsumed, or the lake (Huillcan-uta) agitated by the wind.

[1] Cp. p. 398, ante. The oracle of Zeus at Dodona is a familiar example of an oracle of this class. Grove-oracles are not very common in advanced America owing to the general deficiency of timber in the elevated districts: there was one at Tauca, in the province of Conchucos in Peru (Arriaga, p. 14). The leaves of the trees were taken away and preserved as relics by the worshippers. The birds frequenting the grove were also regarded as huacas, and received sacrifices. After the Spanish missionaries had cut the grove down the Indians continued to worship the suckers (Calancha, vol. i. p. 472).

[2] The Trojans sacrificed to Scamander; this river was perhaps an oracle (Iliad, xxi).

[3] The Huillca-mayu ('*huillca* river') and the Apu-rimac ('great speaker,' see

famous river-oracle on the coast had given its name (Rimac) to the valley through which it flowed; this name survives in that of Lima, the colonial capital[1]. In historical times, the practice of resorting to the rivers as oracles appears to have declined: they had suffered from the competition of more popular huacas. Owing probably to this competition, and to the preference shown for idol-huacas, images of the river-spirits came to be made through which the voice of the oracle was given, as a more definite mode of communication than the vague noise of the rushing water[2]. Two only, and those in valleys on the coast, appear to have retained any great importance in the later Inca age: these were that of the Rimac, above-mentioned, and of the Pacasmayu, the second valley northward from Truxillo[3].

next note), both descending from the watershed which divides the Collao from Northern Peru. So the Huaca-mayu in New Granada, &c.

[1] *Rimac* = 'speaker,' part. of *riman* = he speaks. So Rimac-uma (the great speaker or oracle), in Ecuador, &c.

[2] The same process, carried a step further, in the Old World is illustrated by the younger Pliny's description of Clitumnus (Lib. viii. ep. 8); here, in accordance with European practice, the answers of the idol were given on tablets of wax (stat Clitumnus ipse amictus ornatusque praetexta; praesens numen atque etiam fatidicum indicant sortes). The River of Lima is still called the Rimac. It should be mentioned that the Indians denied that Rimac was so called from its 'speaking' river, and ascribed the name simply to the speaking idol. 'Are you one of those,' said a native Indian official, derisively, to Calancha, 'who believe that Rimac is so called from the river?' Calancha appears disposed to agree with the Indian, on the ground that during most of the year the current is so slight as to be practically noiseless (Cronica Moralizada, vol. i. p. 236). This, however, would have been a reason for resorting to the river as an oracle when the current was strong and boisterous, and apparently had something to say. The belief of the Indians only indicates that the original natural oracle had given place to the idol before the time to which Indian tradition extended.

[3] Relacion Anonima, p. 164. The oracle of Pacasmayo, a corruption of the Yunca name Pacatnamu, which Calancha (vol. i. p. 545) explains as = 'father of all,' was replaced after the conquest by a church of the Virgin of Guadalupe. The extensive ruins of that of Rimac, between the modern city of Lima and the sea, still exist under the name Limatambo (Rimac-tampu). See Squier, Peru, p. 86. In addition to what has here been said, it should be mentioned that it was the practice, when any river was crossed, to offer up a prayer to the river-spirit, and to perform the ceremony called *mayu-chulla*, which consisted in taking up a little water in the hand and drinking it, in order to prevent being drowned. (Compare similar sacrifices by Cleomenes to the Erasinus and to the Ocean at Thyrea, and by Xerxes to the Strymon, Herod. Erato 76, Pol. 113). The fishermen did the same before fishing (Arriaga, p. 11).

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Influence of the Huillcas.

Like the greater idols of Mexico, most of the principal huacas of Peru seem to have been also oracles. The guardians of the great speaking huacas appear to have exercised in virtue of their office an independent influence which was sometimes sufficiently powerful to resist the Apu-Ccapac-Inca himself. It was perhaps natural that they should be the exponents of the popular feeling which supported them, rather than of the policy of the sovereign chiefs, whose interest it was to suppress them: there was even a tradition that the Huillac-umu, a venerable huillac whom the rest acknowledged as their head, had in old times possessed jurisdiction over the supreme war-chiefs [1]. Although this jurisdiction, if it ever existed, had long been a thing of the past, it is certain that the guardians and interpreters of the huacas were by no means the mere tools of authority: they sometimes defied it, in a manner which recalls the prophets of Israel. Manco Inca, for instance, the brother of Huascar who was afterwards set up as a puppet by Pizarro, when passing a celebrated rock-huaca, desired to offer to it the customary sacrifices. The huaca, through its huillac, refused, on the ground that he was not the legitimate Apu-Ccapac-Inca: Manco therefore commanded the rock to be thrown from its elevated position. This was accordingly done, whereupon the huaca emerged from it in the form of a bright-plumaged parrot and flew up the mountain. Manco commanded it to be pursued, but the spirit entered another rock, which opened to receive it: and both rocks were thenceforth regarded with the greatest veneration. In after times a pious Indian sought to expel the evil spirit by planting a cross at the side of each rock. While he was thus engaged, the evil spirit rushed forth in the form of a furious blast of wind, in which the bystanders seemed to hear a threatening voice [2]. 'Jesus! Jesus!' cried the courageous Indian, continuing his task undaunted; and in spite of the fiend the crosses were duly erected. The wind, however, persisted until they were blown down. It was impossible to fix them permanently, and the evil

[1] Relacion Anonima, p. 156.

[2] 'Con tan gran ruido que parecia que hablava.'

one was ultimately left in undisputed possession of the place [1].

We have already said that the Peruvians of the coast regarded the sea as the most powerful among the gods. By the peasants of the Sierra, when they were sent to the hot valleys of the coast to work in the chacras as mitayocs, the vast ocean, which they saw before them as they descended the Cordillera, was chiefly dreaded as a giver of disease: hence they invoked it as they journeyed, praying that the sicknesses might not seize them, and that they might speedily return in health to their homes [2]. The coast peoples, on the contrary, regarded the sea as a benevolent deity: they called it, says Garcilasso, *mama-cocha*, or 'mother sea,' because it yielded the fish which formed so large a part of their subsistence [3]. The whale, for its enormous size, was a general object of worship all along the coast; while each of the several districts worshipped the particular species of fish that was taken there in the greatest abundance. The sardine being the most generally abundant, was most extensively worshipped; elsewhere the gods of the sea were represented by the skate, sea-dog, dory, and crab. This ichthyotheology, if the word may be permitted, of the Yuncas, was no vague superstition, but a system as definite and logical as if it had been formulated by a schoolman. The original and principal individual of each kind of fish dwelt in the upper world or heaven, under the visible form of a constellation. He engendered all the others of the same species, and sent them periodically into the ocean, according to the season of each, to be food for man.

Worship of the Sea—Fish-gods.

[1] Arriaga, pp. 50, 51.

[2] Their children, who accompanied them, were taught to repeat these prayers (Arriaga, p. 11).

[3] Garcilasso here very properly uses the Quichua word, for at the time of the conquest Quichua was spoken in the principal places on the coast. The original Yunca name, however, under which the ocean was here worshipped with sacrifices of white maize flour, was *Ni* (Calancha, Cronica Moralizada, vol. i. p. 370). The name *cocha* (Aym. *cota*) was primarily applied to the lakes of the Sierra, especially that of Titicaca, and secondarily to the ocean. In modern Aymara the ocean is for the sake of distinction sake called '*la-mar-cota*.'

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These people, according to Calancha[1], considered that all the quadrupeds and birds of the earth similarly had their counterparts among the stars, which were the causes of their procreation and increase. The close resemblance between this system of belief and that of the Collao tribes in regard to the llama[2], and the circumstance that the latter tribes also worshipped a fish-god on the shore of Lake Titicaca, tends to support the view that the whole of the population of the vast dominion of the Incas was in fact of the same descent. It is at any rate certain that here alone in the New World was a systematic connection assumed to subsist between the living creatures of the earth on the one hand and the constellations on the other: an idea of great antiquity in the Old World, of which the names still borne by many of the constellations appear to be a memorial. Throughout Peru, moreover, alike in the Sierra and in the coast valleys, as will presently appear, we encounter the worship of the Earth in close association with that of the Creator (Pachacamac): the legends of the latter deity, however, vary in each of the two districts to such an extent as to indicate prolonged isolation though not enough to preclude the suggestion of a common origin. Similar legends are wanting in New Granada and Mexico, and the Mexican deity Tezcatlipoca bears only a superficial resemblance to Pachacamac, being the embodiment of air or wind rather than of an animating spirit or creator.

Worship of lakes—Titicaca.

The economical importance of the lakes of the sierra, already pointed out[3], in the early development of advancement, prepares us to understand why they were generally invested with a definitely sacred character. Such was especially the case with the great lake of Titicaca, the southern shores of which were regarded throughout the sierra, pursuant to a religious legend prescribed by the Incas, as the district where men and animals, sun, moon,

[1] Vol. i. p. 369.

[2] Ante, p. 294. The people of the sierra considered the constellation Lyra to represent the original llama, giving it the name of *urcuquilla*.

[3] Ante, p. 296. Occasionally lakes were chosen as paccariscas: that of Soclococha was the general paccarisca of the Chanca tribes, by whom other lakes were assigned as the paccariscas of the llama (ante, p. 294).

and stars, were fashioned by the Creator; this lake, indeed, was sometimes assigned as the paccarisca of the Creator himself. To the people of the Collao this lake was what the ocean was to those of the Yuncapata[1]: they called it *mamacota*, or mother-water, because it furnished them with supplies of food. The worship of the lake, a remnant of the primitive religion of the Collao, centred in two famous idols. The more important of these was that called Copacahuana, made of a bluish-green stone, having the body of a fish surmounted by a rude human head and placed where a broad view of the waters of the lake, including the island of Titicaca, was commanded[2]. This female Dagon or Oannes of the New World, though long over-shadowed by the ever-increasing prominence, during the times of the Incas, of the neighbouring huaca-rock of Titicaca, still retained great importance. She has, in a certain sense, survived the sun himself as an object of worship: for while Titicaca, after the conquest, became a deserted rock, it was only found possible to abolish the worship of the idol of Copacahuana by substituting for it an image of the Virgin, which remains to this day one of the most important objects of pilgrimage in the Catholic world[3]. The idol of Copacahuana was venerated as the giver of the fish with which the lake abounded: that called Copacati (serpent-stone), erected at no great distance, represented the element of water as embodied in the lake itself, under the form of a figure enwreathed by serpents[4].

[1] *Yunca* = hot, *pata* = terrace (ante, p. 340): the general name formerly given in the sierra to the continuous district of the coast valleys. It is, in fact, a vast irregular terrace, having a considerable average elevation above the sea level.

[2] *Copa*, which Calancha explains as = precious or valuable stone, is apparently the same word with *corpa*, the term employed to designate masses of metallic ore: *cahuana* (old spelling, *cauana* or *cabana*) = prospect, belvedere (*cahuan* = he gazes or looks).

[3] Squier, Peru, p. 323. When idolatry was made a penal offence the Indians used to bury their idols, and offer sacrifices secretly at the place where they were thus hidden. Another famous shrine of the virgin in the Collao, that of Pucarani, replaced an equally famous huaca (Calancha, vol. i. p. 867).

[4] Calancha, vol. ii. p. 9. The Copacati was at or near Yunguyo. At Illahui, a few leagues further to the northward on the same side of the lake, there was another idol similarly enwreathed with serpents, having a double face, and doubtless also representing the lake (Arriaga, p. 57).

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These creatures, it would appear, represented the sinuous motion of the waves: the same idea will be presently encountered in New Granada [1]. Shortly before the conquest the lake-goddess of Titicaca, who was chiefly worshipped as the giver of rain, gave signal evidence of her vitality. Huayna Ccapac, the enthusiast of monotheism, and disestablisher of huacas, had determined to establish on an island of this lake, as the religious centre of Peru, a shrine to Yatiri, or the Ruler, the Aymara name of the Creator-god Pachacamac in his latest development of Pachayachachic or 'director of all things,' whose worship he proposed to substitute for that of all other deities. He first set up the image on the island of Titicaca itself. This proved a failure; the god, when invoked, remained obstinately silent. A similar result followed when the attempt was made on the island of Apinguela. A third shrine, built on that of Paapiti, was inaugurated with the usual sacrifices of llamas, children, gold, and silver. The lake, swollen by tempestuous rains, thereupon rose and covered the desecrated soil: nor has this island ever emerged [2].

Lake Worship in New Granada—Bachuê.

It was in the comparatively small and poorly-endowed advanced district of New Granada that the worship of lakes assumed the highest importance. In order to understand the veneration with which these perennial monuments of the activity of the water-spirit were regarded, it must be remembered that the produce of the fields of maize, quinua and potatoes was here the sole alimentary resource, and that the seasons in this exceptional situation are extremely variable. Two dry seasons and two rainy seasons are usually reckoned, the former commencing approximately with the solstices, the latter with the equinoxes: but it is never known when these seasons will begin or end. Hence the extraordinary attention bestowed by the Chibchas on the reckoning of time, and their intense devotion to the gods of

[1] See next page. The serpent occurs elsewhere as the symbol of continuous motion: Quetzalcohuatl in Mexico, the Mithras serpent in the Old World, represent the sun. So the cloud-serpent of the Otomi hunters, post, p. 465.

[2] Fr. Alonzo Ramos Gavilan, Hist. de Copacabana, Lib. i. c. 30, &c.: Calancha, vol. ii. f. 8, &c.: Fr. Rafael Sans, Hist. de Copacabana, c. 23, &c. Huillcanuta was another famous lake huaca (Cieza de Leon, Pte. II, c. 28).

water[1]. All lakes were worshipped by the Chibchas: each was an object of pilgrimage to the inhabitants of other districts, because each had its own tradition, and received sacrifice according to its own ritual. One of the most important was that of Iguaque, four leagues northward of Tunja. On the first day of the world there emerged from its waters a beautiful woman called Bachuê or Fuzachagua, carrying in her arms a child three years old[2]. These were the ancestors of the race: when the world was peopled, they returned to the lake, and disappeared in its waters in the form of serpents. Bachuê was universally worshipped as the goddess of food-plants: the name simply means 'she who suckles the maize[3].' Her nursling represented the maize plant itself: this graceful symbolism is repeated, as will presently appear, in Mexico. The myth attached to the more famous lake of Guatavita appears to have been substantially the same: Bachuê inhabited its waters in the form of a serpent[4]. This lake was regarded throughout the plateau as the principal dwelling of the water-goddess. Ancient tracks, which are still to be seen, led to it from all parts: small images of gold and silver were flung into it by the pilgrims who flocked to it in order to sacrifice to the rain-spirit. Small as was the value of these offerings individually, it is certain that in the course of many years vast quantities of the precious metals were accumulated in this lake, and were recovered from it by the industry of Spanish adventurers.

Laws of History of Theology.

Thus much concerning the place of Water among objects of early worship: it follows next in order to discuss briefly that of the Earth, almost invariably associated with it. It is, however, impossible to place this in its true light without first noticing certain laws which appear to have regulated the progress of early theology. These laws are simply

[1] Cp. ante, p. 426.

[2] The significance of this should not escape notice: the child represented the maize fully formed and ripe, ready for the use of man.

[3] The name should apparently be Abachuê (*aba* = maize, *chue* = breasts). Fuzachagua is properly *fucha cho gue* = 'the good woman,' literally, 'woman (who) is good.' The explanation of the latter word is due to Dr. Uricoechea, Gramatica de la Lengua Chibcha, Introd. p. xxi, cp. p. 56.

[4] Pedro Simon, Noticias Historiales de Tierra Firme, Parte II, Not. iii. ch. 2.

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those which have guided man in relation to other objects: in knowledge he has always advanced (1) from the singular to the general; (2) from the obvious to the remote; in practice he advances (3) from waste to economy of labour. We shall presently recur to the second and third of these canons: the recognition of the Earth as a comprehensive object of worship is governed by the first. The same canon has governed the recognition of another co-ordinate power of even greater importance; the power called by the Quichua Peruvians Pachacamac, or the spirit of animated things. In these two parallel conceptions are virtually comprehended whatever objects of worship have been noticed in the preceding pages. Those of animal nature form no exception; for, according to the Peruvian theory of things, animals have emerged from some part of the earth as their paccarisca, as has been shown in the case of man and the llama, each, as will presently appear, having previously received the breath of life from Pachacamac, who animates all things. These conceptions probably mark an epoch in the progress of speculation: an epoch at which man has exercised the power of generalization; at which that great religious and economic reform which consists in diminishing the number of objects of worship is foreshadowed. Besides the heavenly bodies, the latest Peruvian theology recognized only three great gods, the Creator, the Earth, and the Thunder. The recognition of Earth and the Creator as objects of worship thus becomes an interesting land-mark in the history of aboriginal thought.

Original conception of the Earth.

The Quichua language, one of the most interesting monuments of human ingenuity at a relatively early stage, enables us to follow the process by which these general conceptions were formulated. The word PACHA, an element common to both, appears to be in its origin a collective term, simply denoting many colligated objects of thought, and hence may be translated 'things.' Employed to designate the visible things around the speaker, it is equivalent to 'world[1]'; applied to things

[1] P(h)acha.

which happen in succession, it means 'time'[1]; to things associated with a person, 'property,'[2] especially clothes: these senses are distinguished by a slight modification of the initial letter. The world of visible things is subdivided into *hanacpacha* (things above, 'heaven'), *caypacha* or *hurinpacha* (things here or below, 'earth'), and *hucupacha* (deep things, 'underworld'): in practice terrestrial things are sufficiently denoted by the simple term *pacha*. Lastly, this term comes to designate the firm substance of the earth itself: *llacta-pacha* is the land of the village. It appears, however, from the order in which its two constituent elements are placed, that in the name Pachamama, under which the Earth was invoked, the first term is used in the older sense, and denotes the 'things' which issue from and are nourished by the earth. The true translation is 'mother of (all) things:' 'Mother-Earth' would be Mamapacha[1]. Such is the origin of the name under which the Peruvians worshipped the soil, or firm substance of the earth. The development of the conception to which it corresponds is not a solitary instance of the advance which man makes from singular to general ideas; we have already seen that lakes are treated as the efficient causes of rain, a practice which obviously recognises water as an universal element.

Pachacamac.

A more important parallel is afforded by the correlative conception of an universal spirit animating whatever has life upon the earth. Such a conception would seem to follow naturally, even necessarily, upon the general conception of the earth or world itself. It is not that Pachacamac is conceived as the spirit of the earth: he is rather the universal spirit from whom proceed the spirits of the plants and animals which are produced by the earth. He bears, in fact, the same relation to the mother-

[1] Pacha.

[2] Ppacha. So *pachan* = whole, unbroken: *pachac* = 100, &c.

[3] *Mamapacha*, corresponding to *mamacocha* (ante, p. 433), is found occasionally, but rarely. The explanation given in the text is supported by the circumstance that the analogous name Pachacamac is occasionally found in the complete form Imai-pacha-camac = 'animator of all things' (Molina, ap. Markham, Rites and Laws of the Incas, pp. 29, 31).

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spirits of the manioc, potato, coca, and maize, to those of man, quadrupeds, and birds, which Pachamama bears to the mountains, plains, rocks, and rivers: he includes all these, and whatever there is more of the same kind. Following a practice of the Peruvians, which sharply distinguishes them from the Mexicans, who admitted no sexual relations among the objects of their worship[1], Pachacamac and Pachamama were sometimes, though not universally, associated as male and female powers. The pueblo of Mama, on a tributary of the Rimac, derives its name from a celebrated ccoricancha of the Earth-mother, who was here worshipped as the consort of Pachacamac. It is of special interest to the investigator, for here, as probably elsewhere, the conception of Pachamama was accepted in a special sense, as including the lands immediately adjacent to the village, from which the villagers drew their subsistence. They described the two streams which united their waters below it, as the 'breasts' of the Earth-mother[2].

Pachacamac identified with the Creator.

We are able to follow without difficulty the process by which in Peru this conception of a general spirit of living things coalesced with one totally different in its origin, that of a creator or maker of all things. The latter is of far greater antiquity and universality: it represents, in fact, one of the earliest efforts of primitive logic. Surrounded by objects which the savage knows to have been made or produced by himself and other human beings, his hut, canoe, clothing, weapons, and implements, his children, and grandchildren, the question is naturally suggested, Who has made the vast multitude of objects, and whence have come the vast multitude of living creatures, which are not included in this group? Who made the first man and woman, and the first animals of each species? To this question the answer at once suggests itself that it was a spirit: obviously a great spirit: a spirit which must have assumed a human form, for how could things have been made without hands? The conception of some great spirit, to whom is due, if not the origin of the substance

[1] Note, p. 424, ante.

[2] Relaciones Geograficas de Indias (1881), tom. i. p. 75.

of all things, at least their existing form, disposition, and relations, is so frequent throughout America, that it may be fairly considered a general one: in the Quichua language he is called Conticsi-huiracocha (he who gives origin or beginning)[1]. The making of living things obviously involves something more than giving form to the matter of which they consist. The Creator must have breathed into them the breath of life. This is precisely the function of Pachacamac, whose existence has been proved by a different process of reasoning. Pachacamac and the Creator are therefore one and the same: to indicate the function of creation this god receives the alternative name of Pacharurac, or 'maker,' of all things. The most ancient symbol of the Creator appears to have been an elongated oval plate of gold fixed to the wall of the great Ccoricancha, apparently in imitation of the circular plates which were placed there to represent the sun and moon, and suspended between them in such a way that its greater diameter was vertical. This plate was attributed to Manco Ccapac: in the lesser Ccoricancha in the Huacapata, on the site of the present Cathedral, the Creator-god was represented by a stone statue in the form of a man[2].

Pachayachachic—Director or Ruler of the World.

The form which this conception of the Creator finally assumed, that of a ruler, director, or commander of the world (Pachayachachic), belongs to the later period of the Incas, and may safely be ascribed to the growth and stability of their rule, embodied and administered, as it was, in and through the single sovereign chief who was called Apu-Ccapac-Inca. The traditions collected by

[1] It is right to state that Bishop Ore, probably in his time the greatest European master of Quichua, explains Ticsihuiracocha as 'he who is from the foundations and beginning of the world unto the ends thereof' ('que esta desde los cimientos y principio del mundo hasta los fines del,' Simbolo Catholico Indiano, 1598, p. 40). We know, however, from Betanzos, an author a generation anterior to Ore, as well as from other sources, unknown to him, that Ticsi is an abbreviation of Con-ticsi.

[2] Relacion Anonima, Tres Relaciones, p. 148. As to the oval symbol of the Creator, see the illustrations in facsimile from the MS. in the Biblioteca Nacional of Spain, in the Relation of Salcamayhua, at pp. 244 and 257 of the same volume: Markham, Rites and Laws of the Incas, pp. 76, 84. This plate was removed by Huascar, who substituted for it one representing the sun. Probably this archaic symbol originally conveyed the general idea of a paccarisca.

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Molina ascribed the establishment of the Creator-god under this form, and the reasoning which had conducted to it, to the Apu-Ccapac-Inca Pachacutic, to whom the great extension of the Inca domination is mainly due, and whom we know to have been the author of various other changes in the system of religion. Leaving the ancient symbol of the Creator, attributed to the legendary age of Manco Ccapac, still on the wall of the great Ccoricancha, and the statue of stone in the lesser one, Pachacutic built for the ruler of the world a new shrine or temple at the north angle of Cuzco, at no great distance from the Ccollcampata, on the site now occupied by the church of Los Nazarenos. In this building, called the Quisuarcancha, he placed a golden statue of the creator in his character of Ruler or Director. Probably for the purpose of rendering it more manageable in ritual, for the Peruvian gods were always removed from their dwelling-places into the open air for the purpose of worship, this image was less than the size of life, no larger, indeed, than a boy of ten years. It represented a man erect, the right arm elevated, the hand partially closed, and the thumb and finger raised, as at the moment of uttering the solemn *ñisca*, or word of command. Previously to this time, it would appear, the sacrifices offered to the Creator had been voluntary, though universal: Pachacutic assigned to this god, for the first time, flocks of llamas, maize-plantations, and labourers [1].

Process of Creation.

From the prayers to the Creator and other huacas, which have been preserved by Spanish writers, documents which are among the most interesting monuments of aboriginal America which we possess, we are able to form a sufficiently clear idea of the story of creation as it was taught to the peoples of the sierra under the rule of the Incas. The creator, a spirit or god, rich, powerful, and generous, made all things by his word (*ñisca*). The traditional formulas of creation are often quoted in the prayers. 'Let earth and heaven be . . .[2].' 'Let a man be, let a woman

[1] Molina, ubi sup. p. 11.

[2] 'HURINPACHA HANACPACHA CACHUN': Molina ap. Markham,

be: let it (him or her) eat, let it (him or her) drink[1].' 'Let day be, let night be: let it come forth, let it shine[2].' 'Let a huaca be: let a huillca be[3].' The sun, together with all other objects of worship, was conceived as having come into existence at the word of the creator: in another passage in a prayer just quoted the Creator is besought that his son, the sun, may run his course in peace and tranquillity[4]. The ruling tribe are conceived as the objects of a separate act of creation: 'Let a chief be: let an Inca be . . .[5].' Only once, in the prayers which have come down to us, is the word of creation ascribed to any huaca other than Pachacamac: this is in the case of the settlement of Cuzco, which, as the reader is aware, was of comparatively recent origin. The creation of Cuzco was ascribed to the sun, who is invoked as father of the Incas, and reminded that he has said, 'Let the tampu of Cuzco be: let it be victorious, fertile, tranquil . . .[6].' Tiahuanaco

Rites and Laws of the Incas, p. 32. Earth, it will be seen, stands first: this is in accordance with other early cosmogonies.

[1] 'CARI CACHUN HUARMI CACHUN: MICUCHUN UPIYACHUN:' Id. pp. 28, 30. The sense might be better expressed thus: 'Let this be a man, let this be a woman,' this formula being supposed to accompany the act of making each individual.

[2] 'PUNCHAU CACHUN TUTA CACHUN: PACCARICHUN ILLARICHUN:' Id. pp. 30, 56.

[3] 'HUACA HUILLCA CACHUN:' Id. p. 32.

[4] 'PUNCHAO CHURIYQUI(CTA) CASILLA(CTA) QUISPILLA(CTA) PURICHUN': Id. pp. 30, 56.

[5] 'CAPAC CACHUN INCA CACHUN:' Id. p. 31. The position of the ruling class relatively to the rest of the people is here defined in a striking manner. Similarly, according to the legends of the Yuncapata, the sun, after turning the first Curacas into stone, sent to the earth three eggs, of gold, silver, and copper. From the egg of gold the Curacas issue: from that of silver their wives: the Mitayocs and their wives are produced from that of copper (Calancha, vol. i. p. 412).

[6] 'CUZCOTAMPU CACHUN: ATIC OCLLAC SAMAC CACHUN:' Id. p. 31. Notwithstanding the hopelessly disorganised state of the Quichua texts, as presented in Mr. Markham's pages, the reader will be able to verify these formulas of creation by means of the word *ñispa* (='saying,' gerund of *ñin*='he says'), which invariably follows them. With some exceptions, the English versions (made from Spanish ones) which accompany the texts are so inaccurate as to be practically useless. These defects, it should be remarked, are due to the Spanish transcriber and translator, and are mere trifles in comparison with the general service rendered by Mr. Markham to students of American history by the publication of this invaluable volume.

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is assigned as the place, if not of the original creation, of the new creation of man which succeeded the deluge. The legend of Manco Ccapac, as it was recited to a Spanish priest in Cuzco about half-a-century after the conquest, contained the following account of the creation of man:

'There (in Tiahuanaco) the Creator began to raise up the people and nations that are in that region, making one of each nation of clay, and painting the dresses that each one was to wear; those that were to wear their hair, with hair, and those that were to be shorn, with hair cut. And to each nation was given the language that was to be spoken, and the songs to be sung, and the seeds and food that they were to sow. When the Creator had finished painting and making the said nations and figures of clay[1], he gave life and soul to each one, as well men as women, and ordered that they should pass under the earth. Thence each nation came up in the places to which he ordered them to go. Thus they say that some came out of caves, others issued from hills, others from fountains, others from the trunks of trees. From this cause, and owing to having come forth, and commenced to multiply, from those places, and to having had the beginning of their lineage in them, they made huacas and places of worship of them, in memory of the origin of their lineage, which proceeded from them. Thus each nation uses the dress with which they invest their huaca: and they say that the first that was born in that place was there turned into stone. Others say that the first of their lineages were turned into falcons, condors, and other animals and birds: hence the huacas they use and worship are in different shapes[2].'

In this account, it will be noticed, there is an attempt to harmonise two entirely different theories of the origin

[1] So in the prayer to Pachacamac given by Bishop Ore, Simbolo Catholico Indiano, p. 40, after the formula of creation: 'thou hast made, formed, and *painted* men and women' (hiziste formastez y *pintaste* a los hombres y a las mujeres). Unfortunately the Quichua original is not given, doubtless lest it should become the means of fostering idolatry among the Indians themselves: the word, however, which is rendered *paint* appears to have been *llutan* = he daubs, as in the prayer given by Molina (Markham, pp. 28, 33): LLUTAC RURAC CAMASCAYQUI(TA)CHURASCAYQUI(TA) &c. (= who hast painted and made thy creatures and children.) Probably this word merely denotes the modelling of the figure out of wet clay.

[2] Molina, ap. Markham, Rites and Laws of the Incas, pp. 4, 5.

of man, the original one of the paccariscas[1], and the more recent one of the creation in Tiahuanaco. The former is accommodated to the latter: the solemn formula, *paccariclun*, let it come forth, is represented as the word of the Creator. Another matter of interest is that the dresses, the mode of wearing the hair, the language, the traditional chants of each tribe, are treated as having remained the same from the remotest antiquity, from the creation itself.

Pachacamac in the Yuncapata.

In the coast valleys we find the worship of the Earth and the Creator no less closely allied than in the sierra. The coast valley of Irma contained the most famous ccoricancha in Peru, and its chief object of worship was a celebrated image of Pachacamac. Here, however, the social decline already alluded to[2], and far advanced long before the Spanish conquest, had been accompanied by a corresponding decay in religion: the plain objects of human duty had become obscured by an idle and licentious mythology[3]. Of these myths of the coast a single specimen will suffice. Pachacamac was here not considered to be the maker of the sun, but to be himself descended from it. Of the first human pair created by him, the man perished of hunger, while the woman maintained herself on roots. The sun commiserated her solitude, and gave her a son, whom Pachacamac slew and buried. From his teeth there grew maize, the rows of which have a certain similarity to human teeth: his ribs and other bones grew into the long, white roots of the manioc: pumpkins and fruits were produced by his flesh[4].

Worship of the Earth.

No worship is more widely spread among peoples in the

[1] Ante, p. 403. Both of these conceptions, it may be remarked in passing, are commonly met with among the North American Indians.

[2] Ante, p. 365, note 2.

[3] See Father Avila, ap. Markham, Rites and Laws of the Incas, p. 124: Calancha, vol. i. p. 412. When the character of some of these myths is considered, it seems scarcely credible that a modern translator should have published a Quichua version of the Gospel of S. John, in which the word God is rendered 'Pachacamac'! Such however is the fact: see Von Tschudi, Organismus der Khechua-sprache, p. 530. The name of Jupiter, in a Latin version, would be equally appropriate.

[4] Calancha, ubi sup.

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lower and middle grades of advancement than that of the earth: none survives more pertinaciously in the midst of more advanced theological conceptions[1]. None, perhaps, is more rational: certainly none is more natural. Until philosophers conjectured water to be the oldest among the elements, the earth was universally believed to be the most ancient object in nature: the sun, moon, and stars were considered to be comparatively recent. All living creatures proceed from the earth; all are sustained by the earth; all are finally reduced to dust, and return to the earth. The mother-hood of the earth was in aboriginal America no mere figure of speech, but an article of positive belief. In Peru it was so far a matter of universal faith that every tribe, as the reader knows, could point to the place where its ancestor had actually emerged from the soil. The earth, however, was chiefly worshipped, both in Peru and in Mexico, as in the Old World, as the universal provider of subsistence. By the Mexicans she was called 'mother of the gods' (Teteoinnan) and 'our grandmother' (Tocitzin): her peculiar rites will presently be described. Unlike the Creator, the Sun, and the Thunder, all of whom were worshipped under the form of golden statues, it was not the general practice, in the Peruvian sierra, thus to personify the Earth[2], for the simple reason that this is unnecessary for the purpose of sacrificing to her. The great mother is everywhere at hand: like Fire and Water, she visibly consumes the sacrifices which are made to her: all that is necessary is to dig a small trench, to throw in the maize

[1] It is hardly necessary to refer to the Eleusinia, Thesmophoria, Megalensia, &c. Probably the most popular rites, alike in Greece, Sicily, and Italy, were connected with Earth-worship. Maia, or the 'great' goddess, appears to have been the name given to the earth-mother among the primitive Latin tribes (Macrob. Sat. lib. i. cap. 12): if this is so, the name of the month of May, in which the earth renews its vegetation, is simply a monument of early earth-worship. It could probably be shown that in Western Europe the worship of the 'Bona Dea' generally prepared the way for that of the Virgin: this hardly admits of doubt in such cases as 'La Bonne Dame,' the celebrated Black Virgin of Le Puy, and Notre Dame la Major of Arles, whose churches have actually replaced temples of the Earth-mother.

[2] The temple of Mama (ante, p. 458) was in one of the valleys called *chaupiyuncas*, or valleys of 'moderate heat,' at a considerable elevation in the Yuncapata.

flour, and pour out the chicha. For the same reason Pachamama was not usually worshipped in temples. The world of animated things is her temple: the upperworld or firmament is its roof, the underworld its foundation. Hence, also, there was no dedication of officials to her service: when public prayers, as occasionally happened, were offered to her, they were recited by the officials of the three great huacas, the Creator, Sun, and Thunder. It was otherwise in Mexico; there not only had the Earth-goddess her teocallis, officials, and stated sacrifices, but some important pueblos had Earth-goddesses of their own, each worshipped with rites peculiar to herself.

Teotlalli of Mexico.

Mexico affords an instance of Earth-worship which is probably unique. It is here noticed, not because it is directly connected with the Earth-mother, but as a curious illustration of the adoption of archaic religious practices in a stage of advancement subsequent to that in which they have originated. Amongst the buildings and enclosures included in the great sacred precinct or Quarter of the Gods, at Mexico, was a mound, or group of mounds, called Teotlalpan[1], or Place of the Divine Earth, or Soil: it was a monument of the primitive religion of the Otomis, the aborigines of Anahuac. The Teotlalli was an artificial mountain made of rocks and soil, planted with trees, among which the metl was conspicuous, and surrounded by a wall. Hither the great spirit of the Otomis, worshipped under a name which was translated into Mexican as Mixcohuatl[2] or Cloud-serpent, was understood to resort for the purpose of receiving sacrifices. The Otomi were a hunting people: this great spirit, who inhabited their mountains, which were not only objects of worship in themselves, but upon which sacrifices were offered to him, procured for them success in the chase. The Mexicans, too, were ardent sportsmen: and their object, in constructing or retaining this mound on the flat holm of Mexico was

[1] Teotl + tlalli + pan.

[2] Mixtli + cohuatl. The name is applied in modern Mexican to a waterspout. Mixcohuatl was also worshipped in the ordinary Mexican way, as an idol in a *teocalli*: the artificial mountain reproduced or continued in Mexico the identical mode f his worship among the Otomi.

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to attract or to keep the god of the aborigines among the deities of their own pueblo, in order that success might attend their own occasional hunting expeditions in the mountain district of Zacatepec. These alternative terms are employed because it is by no means clear that the Teotlalli was of Mexican construction. The continuance of ancient local rites by immigrants, in connection with some existing monument, is far more likely than the erection of a new structure for such a purpose. In the former case the Teotlalli would acquire a new significance. The Mexicans called their settlement Tenochtitlan, or 'Fig-tree on the Rock.' If the Teotlalli existed at their arrival, it was probably the object from which Tenochtitlan derived its name, and other religious structures would naturally in the course of time be grouped around it. The Otomi, however, though long since driven from the plain of Mexico, maintained their independence in the mountainous district to the north-west[1]. This Otomi god may possibly have been borrowed by the Mexicans from their less advanced neighbours, precisely as they had borrowed the worship of Zapotenantli[2], the 'Mother of the Zapotecs' or people of Zapotlan, a populous valley on the other side of the Otomi country.

Earth worship and Agriculture.

Savages, it has appeared, worship the earth as the place of origin of all things, including themselves, and as a giver of food in the form of game and of wild vegetable aliment. But the worship of the great mother can only be adequately developed among agricultural peoples. Only cultivators of the soil could have formulated the pathetic prayer addressed to the earth by the people of the Collao:

'Mother of all things,
Let me (too) be thy child!'[3]

[1] It should be added that the Otomi were by no means confined to this N.W. district. According to Count E. S. V. Piccolomini, Grammatica della lingua Otomi (Proleg. p. 3), these aborigines of Mexico are, or were in 1841, still found in all parts of the Mexican Republic, from the frontier of Arizona in the North to that of Guatemala in the South.

[2] This borrowed goddess is ranked by Sahagun, together with the Aztec Earth-goddess and the Earth-goddess of Xochimilco, among the twelve principal deities of the Mexicans.

[3] 'PACHAMAMA,
HUAHUA MAHA!'

When planting the seed, the Peruvian women offered chicha and maize-flour to the earth-mother; a sacrifice the antiquity of which is indicated by the fact that it was often performed by the women themselves without the intervention of any huillac[1]. When they fell sick, it was sometimes thought that the Earth-mother was angry with them; chicha was accordingly poured out, and woollen cloth was burned on the spot where the sickness had seized them, in order to appease her. Parturient women invoked her with similar sacrifices[2]. In Peru the worship of the Earth-mother, universal and important as it was, mainly rested on this popular basis: it had no place in the public ritual of the community. It retained a prominent position, nevertheless, among the rites performed for the special benefit of the Apu-Ccapac-Inca. In the ritual of the Ccapac-cocha, ('Sacrifices for the chief'), instituted for this purpose by the Apu-Ccapac-Inca Pachacutic, a sacrifice to the Earth followed those which were offered to the Creator, Sun, Thunder, Moon, and Stars: and a prayer, still extant, was sung to the Earth-goddess by the priests of all the greater huacas: 'Mother of all things! White (bright) Mother! In peace and in safety the Ccapac-Inca, thy child, do thou uphold and preserve[3].' Sacrifices to Pachamama were equally prominent among the sacrifices made by the Apu-Ccapac-Incas in their progresses from place to place: at the principal provincial centres on these occasions, two llamas were sacrificed to the Creator, two to the Sun, two to the Earth, and one to the Thunder[4]. In Mexico, on the other

(Bertonio, Vocab. Aymara). The old lexicographer seems to have found this charming formula particularly irritating. 'They spoke,' he adds, 'as the Devil taught them.' The Yunca name of the Earth-goddess was *Huis*.

[1] Arriaga, p. 11.

[2] Relacion de Santillan (Tres Relaciones, p. 31).

[3] Molina, ap. Markham, p. 56:—

'PACHAMAMA!
CCOYRU MAMA!
CASILLACTA
QUISPILLACTA
CCAPAC-INCA
HUAHUAYQUICTA
MARCARI HATALLI.'

[4] Relaciones Geograficas, vol. i. p. 167. Three more llamas were sacri-

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hand, while these popular rites were wanting, the worship of the 'Mother of the Gods,' the 'Grandmother' of the Aztec nation, had a place among the most important national rites: to some extent, as will now appear, it owed this prominence to the fact that, like Huitzilopochtli and Tezcatlipoca, the Earth-mother was worshipped by the Aztecs, who had been an agricultural people in their primitive northern seat, long before they invaded the plateau of Anahuac, and settled on the holms of Tenochtitlan and Tlatelolco in the lake of Mexico.

Earth-goddess of Mexico—'Heart of the earth.'

Besides the names already mentioned, the Mexican earth-goddess was called Temazcalteci, or 'Grandmother of Hot Springs,' an epithet needing no explanation, and Tlalyollotli, or 'Heart of the Soil.' The Mexican language has no other word for 'soul' than that which primarily denotes the heart: this may be illustrated from a document well known to ethnologists, the invaluable examination of some Indians of Nicaragua, Toltecs by origin, conducted by the friar Bobadilla in 1528, with the view of ascertaining their habits and beliefs. Those who die in battle, it was stated, go above, and dwell with the gods. How could that be, it was objected, when they are burnt or buried? Only the heart (*yollo*), it was explained, went above: this led to the further explanation that the term was used in a secondary sense. What was meant by the heart, according to these Indians, was not exactly the heart itself, but something within them which made them live: which quitted them when they died: which caused death when it quitted them: at the moment of death it flew out of the mouth in human shape[1].' By 'Heart of the Earth' the Mexicans understood an analogous spirit dwelling within and animating the soil: a powerful goddess, not equivalent to the material Earth-mother or Pachamama

ficed in order to procure the acceptance of the others; one on behalf of the Apu-Ccapac-Inca himself, one for his Coya or principal wife, one for his eldest son.

[1] Oviedo, History of Nicaragua, pp. 27, 31, 34 (Ternaux-Compans); Squier, Nicaragua, vol. ii. pp. 351, 356. The root is *yoli* = 'he lives;' so *yolcotl*, *yolqui* = animal. In ecclesiastical Mexican 'soul' is always expressed by the borrowed word *anima*.

of the Peruvians, but rather of the nature of Pachacamac, in the earlier and less comprehensive sense of that word, as the spirit which gives life to vegetation. When it so pleased her, the Indians said, she made the earth to quake[1]; we shall see that this phenomenon was supposed to accompany her principal sacrifice. The difference between the conception of the Earth-goddess here and in Peru is well illustrated by the circumstance that in the latter district earthquakes were not attributed to the action of Pachamama. They were considered to indicate that the huacas were thirsty, and water was poured on the ground accordingly[2]. We have said that the Earth-goddess was probably one of the deities brought with them by the Aztecs from their northern home. Tradition positively connected her rites with the termination of the wanderings of the Aztecs by their final settlement on the island of Tenochtitlan, and ascribed the institution of those rites to the tutelary god Huitzilopochtli[3]: and it accords with this that a male maize-god or Centeotl, of manifestly different origin from Chicomecohuatl, the female maize-deity of the Toltecs, was closely associated with the Earth-mother, and figured prominently in her ritual. Antiquaries have been puzzled by finding the corn-deity of Mexico described sometimes as a male, sometimes as a female. A slight attention to the texts would have suggested the simple explanation that, while the Toltecs worshipped the maize-spirit as a female, the Aztecs considered vegetation generally to be animated by a single great spirit or Earth-mother, and regarded the maize as her male offspring. The Chibchas, as we have recently seen, personified the maize-plant as the male nursling of the goddess of Water. The Aztecs, by an analogous figure, represented it as the male child of the Earth[4].

[1] Duran, vol. ii. p. 187. [2] Calancha, vol. i. p. 378.

[3] See the story of the female victim of Culhuacan in Clavigero, Lib. ii. § 21.

[4] In classing the great goddess of the Totonacs, Tzinteotl or Tonacayohua, as a maize-goddess (ante, p. 416), the writer has followed the old historian Torquemada. Probably, however, this deity was an Earth-goddess, not a Maize-goddess, and was popularly identified as 'Centeotl' by a natural confusion of

The Earth-mother and the God of Maize.

This relation of the maize to the earth as the child to the mother was put conspicuously forward in the rites of the Mexican Earth-goddess. Throughout her principal festival the goddess appears as a secondary personage: the principal part is sustained by her son Centeotl. A woman, attired to represent the Earth-goddess, was first sacrificed, with rites differing only in details from those which have been described in connexion with the midsummer festival of Chicomecohuatl[1]. The victim's last days were employed in weaving aloe fibre into cloths: with these she was conducted on the eve of the sacrifice to the public market, where a pretence was made of offering them for sale; for the mother of the gods, it was said, had formerly gained subsistence for herself and her children by making cloth of aloe fibre. These cloths were really destined to serve as the ritual dress of the maize-god: they concealed a portion of the skin of this preliminary victim, which was wrapped round his loins. Thus attired, he was considered to represent the Earth-mother for the purpose of receiving her great sacrifice. The principal victims having been slain, their blood was offered to the maize-god in a vessel decorated with feathers. This he tasted, bending over it, and dipping his finger in it; he uttered at the same time a loud and dolorous groan, which caused all present to shudder and tremble. At the same moment, it was believed, a tremulous motion agitated the earth itself. So, at least, the Indians declared: and so positive were they in asserting it, that the Spaniards believed the fiend himself

the name with 'Tzinteotl.' The spirit of corn, as conceived by early agricultural peoples, easily coalesces with that which represents the productive power of the soil: the absorption of Ceres, the local corn-goddess of Latium, into the more extensively worshipped earth-goddess Demeter or Cybele, is a familiar instance. The names of Tonacayohua and Tzinteotl, her relation to the sun as the female to the male power, the importance of her worship, all appear to indicate her as the goddess of Earth rather than of the maize-plant. Mendieta, who had an intimate knowledge of Mexican antiquities, was struck by the close analogy of this goddess to the Virgin. 'Parece,' he says, 'que quiso el demonio introducir en su Satanica iglesia un personaje que en ella representase lo que la Reina de los Angeles y Madre de Dios representa en la iglesia Catholica (Hist. Eclesiastica Indiana, Lib. ii. ch. 9).

[1] Ante, p. 422, and note 2 on that page.

to have been in league with those by whom these diabolical rites were celebrated, and to have caused the earth to quake at the moment when the blood of the victims was tasted by the representative of the Earth-goddess. These rites were concluded by the ceremony called *nitiçapaloa*, or 'tasting the soil:' every one present bent reverently to the ground, took up a little earth with one finger, and ate it. This singular ceremony was not peculiar to the rites of the Earth-mother. It was customary when any idol was to be approached with particular reverence: in later times the Indians often performed it before the images of the saints [1].

Local Mexican Earth-goddesses.

Besides the Earth-goddess of the Aztecs, two other among the six great female deities worshipped in the Quarter of the Gods at Mexico may be identified as local earth-goddesses. One of these, the Earth-mother of the Zapotecs, has been already mentioned: the other was the celebrated 'Mother' of the people of Xochimilco, a populous pueblo on the lake of Chalco, a few miles from Mexico. This goddess, probably the oldest Earth-goddess of the valley of Mexico, was worshipped both in Mexico and Tezcuco, under the name of Cihuacohuatl, or 'Woman-Serpent,' but was popularly known as Tonantzin ('Our Mother'). It is easy to trace in the worship of Cihuacohuatl in Mexico the invading stranger as opposed to the national deity. She was understood to be the original mother of the human race: hence, when she appeared in human form, she carried on her shoulders a wooden cradle, in the manner customary with Indian women to this day. Why she was represented under the form of a serpent we are not precisely told: the old Spanish antiquaries were content to recognise in this fact a reminiscence of the intercourse between the serpent and the mother of mankind in the oriental paradise. This form was in any case an appropriate symbol of the most insatiably voracious among the Mexican deities, for none consumed so many victims. Her idol was kept in a large dark apartment, perhaps reproducing her original teocalli at Xochimilco, having only a single low entrance: hence it was called Tlillan, or Place

[1] Duran, ch. 93; Torquemada, vol. ii. p. 275; Sahagun, Lib. i. ch. 30.

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of Blackness. In an adjoining apartment a fire burnt perpetually, ready to light the pans of fragrant gums which flamed before the goddess four times in the day. She chiefly delighted in animal food; but maize-cakes, representing the human head, foot, or hand, and gourd-bowls of chicha or pulque were constantly offered by her votaries. In case these offerings fell off, the sacrificial knife of Cihuacohuatl, which, by an appropriate image [1], was called her 'son,' was wrapped in cloth, placed in the wooden cradle which symbolized her mother-hood, and secretly left in the public market, where its discovery occasioned the greatest consternation, for it was supposed that the goddess had come forth and left it there as a sign that she was ravenously hungry. Every eight days it was the practice to 'kill the hunger' of this voracious goddess by a substantial offering. As each eighth day recurred, an official regularly appeared before the Tlatoani, or sovereign chief, and informed him that Cihuacohuatl was dying for lack of food. A war-captive was thereupon assigned her as a sacrifice, and was at once despatched and eaten in the gloomy Tlillan. Little enough, in this hideous conception, is left of the original character of the beneficent goddess of Earth. The healing tobacco-plant, however, was considered to be her special embodiment [2]: this recalls the Earth-mother of Zapotlan, who had given to men, among other medicines, the healing unguent made from resin, and called *iuxitl* [3]. One other celebrated local Earth-mother may be here mentioned, though she had no place among the gods of the Mexican pueblo. This was the great goddess of Tepeyacac, whose teocalli was replaced at the conquest by a church of Our Lady of Guadalupe, still the most famous place of pilgrimage in Mexico. Tonantzin, or 'Our Mother,' as she was usually called, has been by some authors considered to be the female maize-goddess [4]. This

[1] Ante, p. 403.

[2] Mendieta, Hist. Ecl. Ind. Lib. ii. ch. 19; Torquemada, vol. ii. p. 83.

[3] Id. p. 61. See ante, p. 466.

[4] Clavigero, Lib. vi. § 7. There can be little doubt that she was the local Earth-goddess: she was certainly also known as 'Mother of the Gods' (*Teteonantzin*); Veytia, 'Baluartes de Mexico,' p. 3.

name, and her importance among the local deities of the Mexican valley rather indicate her as the local Earth-goddess. Though here, as in many places in the Old World, the Earth-mother has been nominally superseded by a Christian successor, the Virgin of Guadalupe is still venerated by the simple Indians with a jealousy and an exclusive devotion which sufficiently indicate her as a native goddess in disguise[1]. The peasants of Auvergne similarly worship the successor of the Earth-mother in the form of the 'Vierge Noire,' surmounting the high altar itself in the Cathedral of Le Puy[2].

Persistence of the Earth-spirit.

These primitive fetishes of the intellect have an extraordinary vitality: the Earth-spirit, thus transplanted in rather than banished from the domain of theology, in which it originated, long survived in that of philosophy, and has a prominent place in the physical science of the middle ages. Brunetto Latini, the teacher of Dante, whose verse has preserved his name from oblivion, mentions a current

[1] See Mr. Tylor's 'Anahuac,' pp. 121–124. 'For centuries,' he writes, 'a fierce rivalry existed between the Spanish Virgin called "de Remedios," and Our Lady of Guadalupe, the Spaniards supporting the first, and the native Mexicans the second. . . . Whenever the country was suffering from drought, the Virgen de Remedios was carried into Mexico in procession, to bring rain, till it came to be said, quite as a proverb, "Hasta la agua nos debe venir de la Gachupina!" ("We must get even our water from that Spanish creature!"). If the Spanish Madonna produced no effect after a long trial, the native Madonna was allowed to be brought solemnly in by the Indians, and never failed in bringing the wished-for rain.'

The hatred of the Indians to the Virgen de los Remedios arose from the fact that this little image was a relic of their conquest by the Spaniards, among whom it was familiarly known as 'La Conquistadora.' It was picked up by an Indian at the foot of a maguey, near S. Juan, a few years after the conquest; being evidently a portable image, of European manufacture, it was identified as the historic Virgin which Cortes had set up on the Templo Mayor of Mexico, opposite the teocalli of Huitzilopochtli (Bernal Diaz, ch. 107), which Montezuma had removed, to save it from the fury of the Indian insurgents, and which the Spaniards had carried away with them in their memorable evacuation of Mexico on the night of July 1, 1520. The soldiers who had charge of it, it was supposed, had abandoned it in the retreat. It appears, however, that the portable Virgin which accompanied Cortes was given by him to a Tlascallan chief, and was subsequently placed in the church of the Franciscans at Puebla. However this might be, the Virgen de los Remedios, undoubtedly a Spanish image of the period of the Conquest, was always known in Mexico as 'La Conquistadora.'

[2] See note p. 464 ante.

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opinion ascribing the flux and reflux of the ocean to the respiration of the Earth-spirit, and records the reasoning by which the existence of such a spirit was supported. The earth, it was argued, was composed of the four elements. Where the four elements co-existed, according to mediæval philosophy, there must be life, and whatever possessed life must necessarily have a soul: therefore the earth had a soul[1]. Brunetto's great pupil compared the spirit which united and bound together the jarring elements in the earth to the vital principle in animals[2]. Kepler, more than three centuries later, imagined that the lungs and gills through which the earth-spirit respired, together with other soft parts of its organism, would one day be discovered at the bottom of the sea. He attributed to the restless activity of this spirit the daily motion of the earth: he considered that it contemplated the heavens, observed the stars, caused the globe to tremble, and to sweat volumes of cold vapour, in its terror at the approach of comets, as in 1607 and 1618. As science advanced, the activity of the Earth-spirit was more and more circumscribed: but a century after Kepler its assistance was invoked to account for certain physical phenomena which could not otherwise be explained[3].

Gods of the Heavens.

Having thus surveyed the principal objects of worship belonging to the region of earth, we pass on to consider next those belonging to the upper air or firmament; and, lastly, the heavenly bodies. If our conclusions are correct, the cultivator has universally followed the same order in his theological speculations. Beginning with the gods of the earth, he has advanced to the atmospheric powers or gods of the weather, powers which are at first conceived

[1] 'Li un dient que li mondes a ame, à ce qu'il est fait des iiij. elemenz, et por ce covient que il ait esperit, et dient que cil esperit a ses voies au parfont de la mer, par ou il aspire aussi comme l'ome fait par les narilles: et quant il aspire hors et ens, il fait les aigues de mer aler sus et retraire arriere, et revient selonc ce que ses aspiremenz va ens et hors.' Brunetto Latini, 'Li Livres dou Tresor' (1284), ed. Chabaille, p. 172.

[2] Paradiso, Canto I, 116, 117:

'Questi ne' cuor mortali è permotore:
Questi la terra in se stringe ed aduna.'

[3] Varenius, Geog. Generalis, Cambridge, 1712, p. 143.

as dwelling on particular mountains, but are ultimately disengaged from the earth, and formed into a distinct class. He next infers that these important powers are subject to powers higher still, powers which regulate the winds and the rains, compelling them to recur at regular intervals, and through them exercising an ultimate control over the production of food, and over whatever else affects human life and fortune on the earth. These powers are the sun, the moon, and the stars. When this point has been reached the cycle is complete. No further progress, none, at least, on the old lines, is possible. When it is said that man has begun by worshipping the terrestrial powers, and has advanced successively to the worship of the atmospheric and the celestial, it is by no means meant that he does not, in the very earliest stages of advancement, recognize the wind and the rain, the sun and the moon, as objects exercising influence over his fortunes; for such objects naturally awaken even in the savage mind the instincts of fear and veneration. What is meant is that the atmospheric and stellar powers take a prominent place in the incorporated family of men and gods, bound together by the covenant of sacrifice, at a later period than the gods of the earth. The recognition of these powers as benevolent ones belongs to the stage of artificial food-production. Savages, as we have seen[1], are disposed to regard the powers of the air as malevolent spirits. The sun exercises little influence over their destinies in comparison with the importance which it assumes in the agricultural stage: the moon alone, among objects outside the terrestrial group, appears to the savage to have a beneficent influence on human life, because successive moons bring with them successive natural supplies of food. Nor does the general conception of atmospheric gods necessarily precede the recognition of the sun, moon, and stars as objects of worship. Both in Mexico and in Peru local gods of the atmosphere appear in fact to have filled this intermediate position between the powers of the soil on the one hand and the

[1] Ante, p. 390.

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heavenly bodies on the other: while the worship of general atmospheric gods, such as the Peruvian Thunder-god and the Mexican god of the Wind, is apparently posterior in order of time to the worship of the heavenly bodies.

Atmospheric Gods.

These universal gods of the atmosphere, exercising a general as opposed to a local control over the various phenomena known by the comprehensive name of the weather, appear to be products of the process of generalization equally with Pachacamac and Pachamama. As the scope of human observation is enlarged, it becomes clear that atmospheric phenomena cannot be always attributed to the gods of particular mountains: the atmospheric powers are at length completely disengaged and detached from the earth, and generalized as powers of a separate and a higher class. They are powerful and capricious beings; embodiments, such as have not previously been conceived, of immense force, of universal presence, of irresponsible will. Indra in Asia, Jupiter in Europe, are types of these deities: in America they are represented by the Thunder-god of Peru, and the God of the Wind in Mexico. Of these the latter is the most important; this unique conception is in truth by far the most remarkable among the creations of the aboriginal American mind.

The Peruvian Thunder-god may be dismissed in a few words. He appears to have originated in the local Con or Thunderer of the Collao, a prominent deity, as we have already seen, of the Aymaras, who haunted the mountain-range of the Andes. Similar gods were recognised in other parts of Peru: at Chuquisaca, in the eastern part of the Bolivian Altaplanicie, the Indians worshipped the mountain Churoquella as the god of rain and thunder[1]. In the far north-west, the snow-capped peak of Pariacaca, in the Cordillera of the coast, dominating the pass of the same name which leads from Lima to Cuzco, was the haunt of a god of the same class, who was reputed to have expelled the primitive huaca of the district by launching at him storms of rain and hail during three days and three nights. The

[1] Calancha, vol. i. p. 520.

lake of Pariacaca, on the great highway from Lima to Cuzco, said to have been originally formed by these storms of rain, was pointed out by the Indians to the passing traveller as a monument of this singular contest[1]. Human sacrifices had been required by the vanquished huaca: Pariacaca was contented with monthly offerings of burnt llamas. Four hundred of these animals, still dedicated to his worship[2], were confiscated by the Spanish corregidor half a century after the conquest, together with a quantity of silver plate used in his sacrifices: an illustration of the fact that the worship of these local gods of the atmosphere survived in the remoter parts of the Inca dominion when that of a general god having the same functions had been fully established in its principal centres.

Thunder-god of the Incas.

The Thunder-god of the Incas appears to have been constituted as a general representative of local gods of this class, at a comparatively late period. This may be inferred from his invariably occupying the third place in the triad of great deities, the Creator, Sun, and Thunder, and from the fact that he does not figure in a single ancient legend. Garcilasso de la Vega goes so far as to deny that the Thunder ranked as a god at all; and alleges that he was regarded as a mere servant or messenger of the sun. This view is contradicted by all other authorities: the evidence in favour of the Thunder-god as a great deity or huiracocha is conclusive. We know from Molina that his image in the Ccoricancha of Cuzco represented him in human form, wearing, in allusion to the concealment of his face among the clouds, a headdress which veiled his features, and golden frontlets and earrings, and that he had a special Ccoricancha in the Pucamarca[3]. According to the same writer, the Thunder was first established as an anthropomorphous god by the Apu-Ccapac-Inca Pachacutic, and was by him assigned a share, together with the Creator and the Sun, in the sacred lands

[1] Relation of Diego Avila Brizeño, Relaciones Geograficas de Indias, tom. I, p. 72; cp. Father Avila in Markham, Rites and Laws of the Incas, p. 123.

[2] See ante, p. 437.

[3] Molina, ap. Markham, pp. 16, 21.

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and flocks. The popular conception of this power, one probably anterior to his establishment as a god, represented him with the ordinary equipment of a Peruvian warrior, the sling and mace[1]. The rain-spirit, who was considered to be his sister, accompanied him: she carried in her hands jars of water[2], which the Thunder-spirit smote with his mace. Hence the origin of rain, hail, and snow: the thunder-clap represented the noise of the breaking vessel. This graceful conception was embodied by some unknown poet in an interesting hymn, which has been preserved in the pages of Garcilasso, in the final lines of which the Rain-spirit is reminded that she had been formed and endowed with life for this purpose by the Creator of all things[3]. A similar conception occurs in the mythology of Mexico: subordinate rain-spirits, under the direction of the Tlaloquê or rain-gods, carried earthen water-vessels, which they broke with their clubs, thus producing rain and thunder.

Tezcatlipoca.

The general gods of the atmosphere, apart from those weather-gods who were associated with particular mountains, are in Mexico represented by a single deity. This was Tezcatlipoca, or 'Fiery Mirror[4],' so called from the shield of polished metal which was a conspicuous adjunct to the idol which represented him[5]. Tezcatlipoca, in the

[1] Calancha, vol. i. p. 370.

[2] This figure is employed in a well-known Arabic expression for the clouds used in Job, ch. xxxviii. ver. 37 (*bottles* or waterskins of heaven).

[3] Lines 14–19:

PACHARURAC
PACHACAMAC
HUIRACOCHA
CAY HINAPAC
CHURASUNQUI
CAMASUNQUI.

Garcilasso, Lib. ii. ch. 27.

[4] Probably the correct form is Tezcatlepopoca ('Fiery Smoking Mirror') = *Tezcatl* + *tletl* + *popoca.*

[5] It has gone ill with Tezcatlipoca since he passed into the region of history. This is chiefly due to the carelessness of Bernal Diaz, who in a well-known passage (ch. 92) describes his image as housed under the same roof with Huitzilopochtli, whose brother he alleges him to have been, and as resembling a bear, with shining eyes of tezcatl. He further describes him as the god of hell, who had charge of the souls of the dead. It is well known to readers of

form under which he was worshipped in historical times, was a comparatively recent creation, of gradual growth: he ultimately represents, however, an object of worship belonging to the times of the earliest savagery. One of his names, that which denotes his original nature, was Yoalli-Ehecatl, or 'Night-Wind.' The wind of heaven, with its rapid motion, its force and penetration, its wild and mysterious voice, its evident command over other phenomena, its suggestion of arbitrary power, is usually for the savage the symbol of some powerful spirit. The early Mexicans, arguing, apparently, from the phenomena of breathing, identified it as the power which gave life to men and other animals: Torquemada rightly compares Tezcatlipoca with Jupiter[1]. Other names of this important god were Titlacahuan ('whose servants we are'), Moquequeloa ('the impatient'), Teimatini ('the provident disposer'), and Moyocoyatzin ('who does what he will'): he was best known as Telpochtli, or 'The Youthful Warrior,' because his vital force was never diminished. Being the giver and sustainer of life, he was also credited with the power of taking it away: to this function his name of 'he who

Sahagun and Torquemada that the idol seen by Cortes and his companions standing by the side of Huitzilopochtli, was not Tezcatlipoca, but the war-god's younger brother Cuexcotzin (ante, p. 429). The facts, so far, are correctly stated in Clavigero (book vi. § 6): but he lends some countenance to the error of Bernal Diaz by stating that two teocallis, one of which held the statues of the War-gods, the other that of Tezcatlipoca, stood on the same elevated platform. This is neither correct in itself nor consistent with the account of Bernal Diaz: the second teocalli, as will presently appear, contained an image of the rain-god. Neither Tezcatlipoca, Cuexcotzin, nor any other Mexican deity was ever represented with the face of a bear: any resemblance on the part of the image of Cuexcotzin to that animal must have been due to the fancy of the spectators. Nor was either of these the 'god of hell.' Mr. Prescott alters the narrative of Bernal Diaz so as to suit the supposed facts as understood by Clavigero. The original error is that of Gomara (Conq. de Mejico, ch. 81), from whom Bernal Diaz probably copied the name, having forgotten, if he ever knew it, the true one. Gomara, who was never in America, having mastered the leading fact that the principal gods of Mexico were Huitzilopochtli and Tezcatlipoca, and learning that the principal teocalli contained two images, one of which represented the former, naturally, though quite erroneously, supposed the other to have represented the latter. It is amusing to find the bear-faced Tezcatlipoca figuring once more in M. Albert Réville's Hibbert Lectures (1884) as the brother of Huitzilopochtli.

[1] Vol. ii. p. 39.

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does what he will' apparently has reference. Hence he was called Yaotzin ('the Enemy'), and Nezahualpilli ('the hungry or fasting chief'). He was armed with a dart, placed, ready for striking, in a leathern spear-thrower; these, held in his right hand, indicated him as the giver of disease and death, in which capacity he was the object of profound dread. In his left hand he carried the shield and four spare darts. Tezcatlipoca was supposed to be continually rushing through the highways, especially during the night, ready to pierce some doomed mortal with his dart. For the purpose of assisting him in his career of destruction a singular device was invented. At the cross-roads there were placed benches of stone, resembling the state bench of the Tlatoani, or chief of the pueblo; in order to conceal him as he sat on them, they were enclosed with green boughs, which were renewed every five days. These benches were called his 'waiting-places:' here he crouched, watching for his victims. Some bold adventurers were reported to have seized him and struggled with him in his nightly prowlings: to those who could hold him fast till break of day he promised great gifts, as wealth or invincible strength in war, in consideration of being allowed to depart before the sun revealed his features [1].

Representative of Tezcatlipoca.

The old writer by whom the last-mentioned details are related seems to have been unaware of their significance: this we learn from other sources. Tezcatlipoca always had a living representative; this was a war-captive, annually selected as the victim to be sacrificed at the great festival called Toxcatl, which took place in the month of May. No sooner had one representative been slain, than another took his place; during the year which followed, he was invested with the dress, functions, and attributes of the god himself. He slept in the day-time; at nightfall he went forth, attired in the garments of the god, armed with the fatal dart, and carrying the brilliant shield. Small bells of bronze were attached to his limbs [2]: the symbolic flute or whistle, of burnt clay, was placed in his hand: he

[1] Torquemada, vol. ii. p. 578.

[2] See Mr. Tylor's 'Anahuac,' p. 236.

was followed at no great distance by two custodians. From nightfall to daybreak he traversed the streets of the pueblo, making occasional excursions into the neighbouring country, and resting, when fatigued, on the stone benches provided as 'waiting-places.' The Indian who heard the jingle of his bells or the shrill note of his whistle, knew that the representative of the fatal god was at his door: in order to avert the omen, he hastily arose, placed in a dish hot ashes from the smouldering hearth, scattered incense over them, and waved this offering successively to the east, west, south, and north [1]. This ceremony was a prescribed mode of sacrificing to Tezcatlipoca; it will presently be referred to in connexion with the annual festival at which his representative, having completed his term of service, was slain.

Origin of Tezcatlipoca.

The character and attributes of Tezcatlipoca, imposing as they appear in historical times, were developed from humble beginnings. The name itself is not a strictly personal one. It is borne by some other gods; Xipe, one of the minor Mexican gods, is sometimes called Tlatlauhquitezcatl ('burning mirror'). Such deities appear to have originally dwelt in fetishes or talismans of hard sand-polished stone, such as are still carried by the Indians of Central America; they serve as oracles, for the possessor discerns future things reflected in their shining surface. What is most dreaded is the sign of impending death. In times of sickness or peril the owner anxiously scrutinises his fetish; if his doom be sealed, he will behold there the miniature of a human head, with composed and rigid features, and closed eyes [2]. For the aborigines of Mexico, the figure or face of a corpse, whether seen in dreams, bodied forth in the dim twilight, or conjured up by the mere force of morbid imagination, was always identified with Tezcatlipoca himself [3]. In Tezcuco, the principal centre of his worship, Tezcatlipoca was considered to be

[1] Pomar, Relacion de Tezcuco (in vol. iii. of Icazbalceta's Nueva Coleccion de Documentos, Mexico, 1891), p. 9.

[2] Samuel A. Bard, Adventures on the Mosquito Shore, p. 16.

[3] Torquemada, vol. ii. p. 578.

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the tutelary god of Huitznahuac, one of the six quarters or *barrios* of which this pueblo was composed, and which contained his principal teocalli. Tezcatlipoca, according to the Indians of this barrio, had guided their ancestors in their migration between their northern home and the Valley of Mexico. At each intermediate halting-place, he had commanded them to go yet farther: when they reached the land of the Chichimecs, where Tezcuco now stands, he remained silent[1]. Possibly those who conducted this migration carried one of these fetishes of bright stone, and consulted it as an oracle. The worship of Tezcatlipoca, however, as the principal god of Fate and Fortune, appears to have been diffused through the Mexican tribes at an early period: possibly it represented that of several local gods, who were ultimately recognized as a single deity. In one legend Tezcatlipoca even figures as the maker of the sun: in another, he makes men and women in order that the sun may eat. This strange conception will be again referred to in examining the ideas of the aborigines concerning the nature and worship of the sun.

Tezcatlipoca at the Conquest.

Whatever may have been its commencement, the worship of Tezcatlipoca had gradually advanced until at the time of the conquest he occupied a position in the theology of the Mexicans which has been compared with that of Jupiter in the religion of the ancient world. It accords with this that he is the only one among the Mexican gods whose worship was disseminated by a distinct sect or school of professed votaries. The followers of Tezcatlipoca are often mentioned in Mexican history: they are sometimes associated with the invention of the arts. A legend, already quoted, credited them with the discovery of pulque[2]: according to another, they invented singing and musical instruments, and were the first to organize religious feasts and dances[3]. Little importance can be attached to such stories: in early stages men are always prone to assign a specific origin to whatever has manifestly been superadded to

[1] Pomar, Relacion de Tezcuco, p. 13. [2] Ante, p. 376.
[3] Mendieta, Hist. Ecl. Ind. Lib. ii. ch. 3.

the natural scheme of life. It is, however, certain that while the worship of Tezcatlipoca had spread widely as advancement proceeded, the popular idea of his nature and attributes had at the same time been amplified in a remarkable manner. While the people of Mexico, as has already been indicated, chose each for themselves, among the established gods of the pueblo, one or more whom they regarded as special objects of devotion, the worship of Tezcatlipoca was universal. A sufficient reason was not wanting. Under the influence, perhaps, of the most ingenious and powerful minds of the Mexican tribes, a conception of this god of the air, the giver of life and death, had been formulated, attributing to him unbounded power, not only over the lives and fortunes of men, but over the general scheme of material things. One day, it was sometimes said, he would overturn the sky, and put an end to all things. Prayer was voluntarily offered to other deities: in the case of Tezcatlipoca it was a matter of necessity. It was a species of homage which he demanded as of right: one of his names was Monenequi, 'he who claims prayers, or wills to be prayed to.' In token of this, an ear of gold hung from his hair. As the giver of life and death, he was especially prayed to in sickness by the title of Titlacahuan ('whose slaves we are'). 'O god, who art called Titlacahuan,' so the patient was instructed to say, 'take away this malady that slays me .... If I am healed, I will serve thee, and will seek my subsistence: if I gain aught by my labour, I will not consume it: I will use it to make a feast and dance to thee in this poor house .... O Titlacahuan! Thou mockest me! Slay me not!'[1]

Prominence of Tezcatlipoca.

We have seen that four principal benefits are secured to man by the Covenant of the gods; (1) food and drink, (2) health and long life, (3) success in war, (4) advice in regard to the future. The gods hitherto discussed, those of the corn, the earth, and the rain, are chiefly connected with the first. Tezcatlipoca, as the giver of life and death, was emphatically the god of the second: the third and fourth together constituted the special province of Huitzi-

[1] Sahagun, Lib. ii. ch. 2.

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lopochtli, the tutelar god who had conducted the Aztecs to the valley of Mexico. In the worship of the great god of the Air, no regard was paid to the limits of these functions. Not only was he specially invoked for the purpose of procuring success in war, but prayers were addressed to him, and to him only, whenever the help of the gods was sought in the occasional exigencies of the common weal. If a drought had caused famine, or owing to any other cause distress prevailed among the people, if sickness was more than usually common, if an epidemic invaded the valley, the chiefs proceeded to the teocalli of Tezcatlipoca. An address was made to him, in which the evil against which his intervention was sought was described at length, and he was reminded that life and death, the fortunes and fates of the community, were in his hand. For the Mexicans, the worship of Tezcatlipoca may be said to have been the general expression of that sentiment which is the ultimate seat and root of all religion, the sentiment of dependence[1].

Tezcatlipoca and the 'Coming of the Gods.'

The leading position held by Tezcatlipoca among the gods of Mexico may be further illustrated by reference to the minor festival called Teotleco, or 'Coming of the Gods,' from which one of the (conventional) months took its name. We have seen that according to the Mexican theory of things the energies of the gods must be renewed by certain rests or periods of refreshment. One of these, as might be anticipated, was fixed at the period immediately succeeding the harvest. The main business of the year, in which gods and men are equally concerned, being now concluded, the gods were dismissed for a short holiday or vacation. This was understood to be occupied by them in travelling to distant parts: in the last days of the month of October all were expected to return. Their arrival was celebrated by a feast which lasted three days. The first to return was always Tezcatlipoca. He arrived first, they said, because he was youngest and most vigorous: the rest followed according to their physical powers, the feeblest not arriving until the

[1] Sahagun, Lib. vi.

evening of the third day. A mat, upon which was placed a little heap of maize flour, was placed at the entrance of his teocalli, and carefully watched. Suddenly the heap appeared to be deranged: Tezcatlípoca had descended upon it: his footprints were thought to be visible. When these were observed, the cry went up, 'Teotleco' (the god comes)! and the festival commenced forthwith. Pulque was consumed in great quantities at this festival; for by drinking it on this occasion it was considered that the feet of the gods were washed after their travels[1].

Influence of the greater gods on Food-production.

The original functions of most of the gods who have hitherto been considered are directly connected with the material growth of food. But the obligation to co-operate in the task of food-provision does not rest upon this limited group alone. All who receive sacrifice must assist in the production of the material of which it consists: all must contribute to the maintenance of the corporate community of which they are members. All the gods, as is well known to students of early civilisation, are extremely favourable to agriculture: the cultivation of the soil and the worship of the gods are strictly correlative. Powerless without the gods, the cultivator is religious by the force of circumstances: agriculture, grateful to the gods, is detested by the evil spirits, who are driven by it from their haunts. According to the ancient Persians, when the seed germinates, the evil spirits start up: when the shoots are put forth, the hearts of the evil spirits faint: when the stalk rises, the evil spirits groan: when the ears are harvested, the evil spirits are destroyed. He who cultivates the fruits of the earth is the friend of Ormuzd: he fulfils the divine will as much as if he offered a hundred sacrifices[2]. The Hebrews held agriculture in great respect on the ground that it had been ordained by the Most High[3], who, pursuant to His covenant, visited and watered the earth, making the valleys to stand thick with corn[4]. It is the same in the latest days of the

[1] Sahagun, Lib. ii. ch 12.

[2] Vendidad, ed. Darmesteter, p. 30; M. Nicolas, Essais de Philosophie et d'Histoire Religieuse, p. 20.

[3] Ecclesiasticus, ch. vii. v. 15. [4] Psalm lxv.

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ancient paganism: Virgil suggests to Augustus, in view of his approaching apotheosis, that the germination of the corn and the provision of good weather for the crops would suitably employ the energies of the ruler of the Roman world, when he has taken his place among the gods[1]. So in the Mahomedan theology, food-production and building are alike works of piety and charity. 'Every man that planteth or soweth,' said the Prophet, 'and of the produce of his trees or crops there eateth man, bird, or beast, all that shall be counted unto him for alms . . . . He that buildeth edifices or planteth trees, so it be done without oppression or default of justice, he shall have therefor an abundant reward from the merciful Creator[2].' The gods of America are equally favourable to agriculture, even when their functions are not directly connected with it.

Toxcatl festival.

No better illustration of this could be adduced than the fact that the principal feasts of the two chief Mexican deities, Tezcatlipoca and Huitzilopochtli, took place in the month of May, when rain was indispensable to the crops, and were so arranged for the express purpose of inducing those powerful deities to assist in procuring it. Their original functions, it will be remembered, were in no way connected with the procuring of rain: for Tezcatlipoca was the god by whom men breathed the breath of life, Huitzilopochtli the god of victory in war. These and all other benefits presuppose for those who are to enjoy them an ample supply of maize in due season: at this critical time the whole strength of the united community of men and gods has to be put forth in order to secure it. But men must approach the great gods with clean hands. The feast was therefore preceded by a period of repentance and penance, notice of which was solemnly given by the officials of his teopan. Within the great sacred enclosure there was an elevated circular platform surrounded by a wall, where burnt gums were occasionally offered to the god of the Air, by simple waving or elevation of the brazier at each point of the compass. Hither, during ten successive days, one of

[1] Georg. i. 27.

[2] Yahyá ibn Muhammad, Book of Agriculture, vol. i. p. 3.

the officials of the god, dressed as his representative, came with the symbolic flute, or whistle of burnt clay; this he sounded at each point of the compass, beginning with the east, after which he silently performed the rite called *nitiçapaloa*, already described. The spectators of the ceremony did the same, grovelling on the earth, and imploring the god by his names of Yoalli and Ehecatl (Night and Wind), not to forsake or forget them, or else to deliver them speedily from life and its troubles. The shrill sound of the whistle struck terror into the wicked; for Tezcatlipoca might well take their lives at this juncture, when his covenant with men was about to be renewed: hence they offered him incense, and prayed earnestly that their sins might be covered [1]. On the eve of the feast the idol was newly clothed, and formally exhibited to the public, his old trappings being carefully preserved: when the morning came he was placed in a litter, carried down the steps of the teocalli, and deposited on the ground. The ceremony which followed cannot be better described than in the words of Torquemada:

'The youths and girls who lived in the teopan then came forth with a thick rope consisting of strings of parched maize (which they call *izquitl*) twisted together: with this they enwreathed the litter, placing a string of parched grains around the neck of the idol, and a garland of the same on his head. This rope was called *Toxcatl*, to denote the dryness and barrenness of the season. *Toxcatl* means anything dry: the whole purpose of this feast was to pray for water from heaven for the maize plantations, as in our Rogations. Therefore this feast was always kept in May, about half of which month it occupied, this being the time when there is most need of water in order that the tender plants and herbs may grow and ripen in due season.

The youths came to the ceremony dressed in cloths of fine network, with garlands of parched maize on their heads, and necklaces of the same. The girls came with new dresses and ornaments, with similar garlands and necklaces, their feet and arms decked with feathers, and their cheeks painted. They carried also many strings of this parched

[1] In Mexico, as in Peru (see ante, p. 443), the conception of 'sin' (tlacolli, tlatlacolli, the original sense being 'division,' 'diminution') had been formulated with sufficient accuracy to admit of its transfer to the Christian theology.

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maize, and placed them on the heads and necks of the chiefs, and put into their hands bunches of the same, very curiously and ingeniously arranged. After which they strewed on the ground many leaves and prickles of maguey, in order that those who desired might draw their blood and sacrifice it to the idol[1].'

The idol was then carried round the teopan, preceded by two officials who burned incense before it, while the people flogged their bare shoulders with thick knotted cords of aloe fibre. The food-offerings made by the people to the god were next arranged at the foot of the steps of the teocalli, whence they were removed to the apartments of the officials, who consumed them with appetites sharpened by a five days' fast. The sacrifice of the war-captive concluded the principal business of the festival, which was immediately followed by one held with a similar object in honour of the war-god Huitzilopochtli, next to Tezcatlipoca the most powerful among the gods of Mexico, in which the *toxcatl* or emblematic rope of parched maize was an equally conspicuous symbol. This, as we have already seen, was the war-god's principal feast: and it thus appears that the principal festivals of the two most powerful gods were held at the time when there was thought to be the greatest need of their active assistance, when the most important matter of the year, the maturing of the maize crop, was prominently in question. The two in fact constituted a single great festival: it was the principal event of the Mexican year[2].

Huitzilopochtli and the Rain-god.

The assistance of the war-god in the great task of procuring rain for the crops was further secured in the following manner. Both at Mexico and at Tezcuco, on the summit of the mound which supported the teocalli of Huitzilopochtli, there stood a small building containing an image of the Tlaloc, or rain-god of the mountains to the east of Tezcuco. This arrangement enabled the tutelar deity to control the action of the rain-god, and to compel him, if necessary, to exert his powers in the interests of the community. For the great rain-god, according to Mexican theology, had in the

[1] Monarquia Indiana, vol. ii. p. 257.

[2] Sahagun, Lib. ii. ch. 5.

mountains a hidden dwelling-place consisting of four apartments arranged round a court: before each of these stood a great earthen vessel or reservoir of rain. One alone contained good rain, such as made the corn to grow, and to ripen in due season for the use of man: that contained in the second vessel produced mildew in the ripening seed: that of the third turned to hail: that of the fourth made the plants to dry up, so that they never attained maturity[1]. The rain-god or his attendant spirits, it appears, might not only withhold fertilising showers, but might send others which were positively pernicious. Hence the necessity for subordinating them to the national deity. Huitzilopochtli, ever mindful of the interests of the two communities which it was his function to protect, exercised over the action of the rain-god, thus domesticated under his immediate supervision, both a positive and a negative influence. To his intervention it was due that the hurtful waters were withheld, and that beneficial showers fell in abundance. Without the cooperation of the rain-god, secured by this means, the great festival of their tutelar deity would have been to the Mexican people a mockery indeed.

Nezahualcoyotl and Monotheism.

It would be entirely in accordance with the attributes of Tezcatlipoca, and with his prominent position among the Mexican gods, that he should have become the exponent of that tendency to concentrate the attributes of deity in a single powerful being, which has already been remarked in Peru: and it would be natural to connect Tezcatlipoca with a monotheistic movement which is said to have appeared in the Mexican pueblos in the fifteenth century, and to have had its principal centre in Tezcuco. This movement appears to have been altogether misunderstood. In the times immediately succeeding the conquest, when the Spanish missionaries were pursuing the laborious task of conversion, they naturally sought to strengthen their position by citing whatever in the old Mexican theology resembled the doctrines of the Christian faith. They erroneously supposed that an invisible supreme being known by the names

[1] Hist. de los Mexicanos por sus Pinturas (Icazbalceta, Nueva Coleccion vol. iii. p. 230).

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of Intloque-Innahuaque ('With whom and by whom') and Ipalnemohuani ('By whom men live') had been recognised by the Mexicans: and these names, undoubtedly familiar to their audiences, were accordingly employed by the missionaries to recommend the doctrines of Christianity, precisely as similar resemblances had been utilised by the early preachers of the faith in the ancient world[1]. They went, it would appear, further than this: they composed hymns in the native language, in which the names of Intloque-Innahuaque and Ipalnemohuani were freely used, and in which the style and imagery of the ancient Mexican poetry were cleverly imitated[2]. In later times a more extraordinary fiction was promulgated. Nezahualcoyotl, a famous Tlatoani of Tezcuco, and grandfather of the chief who ruled at the conquest, was alleged to have rejected the existing religious system, to have recognised this one invisible supreme being as the only true god, and to have built for him a teocalli of nine stories, containing no idol, and on which incense was offered to him four times a day[3]. In all this, it is hardly necessary to say, there is not a word of truth. Torquemada, to whom the incidents of the life of Nezahualcoyotl were perfectly well known, knows nothing of it; what he tells us, indeed, is wholly inconsistent with it. This chief, according to him, had doubts as to the multitudinous gods of Anahuac, though he acquiesced in their worship, as became the sovereign chief of one of its principal pueblos. Nezahualcoyotl believed that the Earth was the mother, and the Sun the father, of all things: an opinion widely entertained among peoples in the early and middle stages of advancement, and perfectly consistent with the circumstances of his time[4]. Torquemada tells us

[1] Acts of the Apostles, ch. xvii. v. 28.

[2] 'Ancient Nahuatl Poetry,' edited by Dr. D. G. Brinton (Philadelphia, 1887). According to the learned editor of these interesting pieces, most of them are genuine remains of aboriginal poetry dating from the period anterior to the Conquest. Some, however, are obviously of Christian origin.

[3] Veytia, Tezcoco en los Ultimos Tiempos, p. 246. The original source of this feeble piece of romance appears to be one of the Tezcucan writers who bore the name of Ixtlilxochitl.

[4] Vol. i. p. 148.

nothing of the worship by Nezahualcoyotl of a supreme being under the names of Intloque-Innahuaque and Ipalnemohuani. In another place, however, he tells us that both these names were in fact nothing but general names for the greater deities, and he elsewhere expressly states that the latter was commonly applied to the Sun[1].

Worship of the Heavenly Bodies—The Stars.

This survey of the principal objects of worship recognised in the theologies of aboriginal America terminates with the sun, moon, and stars. In the New World, as in the Old, the predominant worship of the heavenly bodies is the goal towards which religious progress, on the whole, steadily advances: and in both, this worship is chiefly concentrated on those which command attention by their superior brightness, and which differ from the rest in being apparently endowed with the power of locomotion. These are the sun, the moon, and the planets. It is hardly necessary to say that the scheme of the solar system was wholly unknown to the aborigines of the New World. Of the planets, the only one generally recognised by them was Venus: the Quichua Peruvians called it *auquilla*, 'the chief of the lights,' and *machu-ccoyllur*, 'the old' or 'original star': more generally, however, it was known as *chasca-ccoyllur*, 'the long-haired star'[2]. Venus had equally attracted attention in Mexico: in the Quarter of the Gods there stood a stone pillar called Ilhuicatitlan ('towards heaven'), on which a figure representing the planet was painted. It was regarded as a god: a war-captive was sacrificed whenever it reappeared in the heavens. To the rest of the stars no particular significance appears to have been attributed in Mexico: by the Peruvians, both of the sierra and the coast, the various constellations were considered each to

[1] Vol. ii. pp. 21, 55. Mendieta says the same (Hist. Ecl. Ind. Lib. ii. c. 8).

[2] According to the author of the Relacion Anonima (p. 139), four other planets were recognised by the names of Pirhua (Jupiter), Aucayoc (Mars), Catuilla (Mercury), and Haucha (Saturn). Garcilasso mentions no planet but Venus: and all these names are unknown to Acosta, who had some knowledge of astronomy, and gives the fullest extant account of that of the Peruvians. It is improbable that any other planet than Venus was observed as such, either in Peru or in Mexico. The Mexicans called Venus *Hueycitlalin* (great star).

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represent the prototype or original form of some quadruped, bird, or fish. One, as we have seen, represented the llama [1]: in others they traced the forms of the serpent, the puma, and the jaguar. From the various constellations, it was thought, all animals had proceeded: according to a legend of creation current in the district of Arica, the human race itself was descended from four stars, which Pachacamac had sent down to the earth, to become the male and female ancestors of the chiefs and of the mitayocs respectively [2]. This remarkable theory was even extended to the vegetable world. The Pleiades were called *Còllca* [3] (the maize-heap): in this constellation the Peruvians both of the sierra and the coast beheld the prototype of their cherished stores of corn. It made their maize to grow, and was worshipped accordingly. We have here the system called Sabism, according to which all celestial and terrestrial objects form one great connected system of animated life, the growth of the latter being produced by the influence of the former. In the Old World this theory was carried yet a step farther: the Sabians of Chaldaea considered each of the minerals to be produced in the earth by the effect of some corresponding star [4]. This conception is wanting in the New World, although both in Mexico and Peru gold and silver were considered to have been produced by the gods; in the latter district they were ascribed to the Moon and the Earth-mother respectively. Another god was understood to have provided the red sulphide of mercury called cinnabar (*ichma*), which was often employed in sacrifice as a substitute for blood [5].

Worship of the Moon.

Both in the Old World and the New the worship of the Moon occurs in two different forms. In its later and more familiar form, Moon-worship is merely a natural consequence and supplement of the worship of the Sun, to which the Moon is considered to be related as the female to the male power: such was the worship of the Moon in the

[1] Ante, p. 451.
[2] Calancha, vol. i. p. 414.
[3] Yunca, *Fur* (Id. p. 554).
[4] Chwolson, Die Ssabier, vol. ii. p. 467.
[5] Calancha, vol. i. p. 373. Relaciones Geograficas de Indias, vol. i. p. 111.

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principal civilised countries of the Old World at the Christian era. A similiar form of Moon-worship, collateral to the worship of the sun, occurs both in Peru and in Mexico at the time of the conquest. But in the New and the Old World alike we find traces of an earlier Moon-worship, which appears as an original and independent form of religion. The worship of the moon, as we have already noticed, naturally precedes that of the sun, because a connection is traced between the lunar phenomena and the food-supply in an earlier stage than that in which a connexion is traced between the food-supply and the solar phenomena. In the savage life such a connexion appears to be naturally inferred by the following process of reasoning. The different seasons of the year bring with them different supplies of natural food: thus, for example, in California the sweet inner bark of trees and the blossom of clover are relied upon during the spring, roots in the early summer, salmon in June and July, and ripe grass-seeds in early autumn; the annual rotation of foods ends with manzanita berries, pine-nuts, and acorns[1]. The approach and duration of the periods in which these different supplies are provided is measured by the successive reappearances and gradual changes of the moon. Hence, apparently, the savage naturally regards the moon as the cause of these successive supplies of food; when he forms the conception of spirits, as a class of powerful beings who enter into the various objects of nature, he assigns a prominent place in this class to the spirit of the moon, and he considers this spirit to be in the highest degree a benevolent one. Nor is this all: the moon itself presents to the eye, in the former half of each lunation, a phenomenon which resembles the phenomenon of growth in plants and animals. This apparent growth of the moon is considered to be the cause of growth in the living things on which it shines, and their growth is considered to take place chiefly during the moon's increase: a conclusion from which early cultivators deduced many practical maxims. Again, moisture in the air and soil is perceived to be favourable to organic growth. Atmospheric

[1] Powers, Tribes of California, p. 235.

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moisture, being greater at night than in the day, is naturally attributed to the moon's influence; and at length the moist rays of the moon are regarded as having in themselves, not only the power of stimulating the growth of plants and animals, but the faculty of generation itself[1]. Such views were widely current in the Old World, from the earliest times until long after the modern development of physical science had begun: Bacon himself approved the time-honoured practice of planting, sowing, and grafting during the increase of the moon, and considered it to be to some extent founded upon experience[2].

The Moon and early Agriculture.

From these indications it might be inferred that the moon would become a prominent object of worship in the early stages of agriculture: this conclusion is confirmed by the fact that among early agricultural peoples the new moons and full moons were usually celebrated as feasts. The popular religion of the most advanced people of the ancient world placed the moon, according to some old authorities, first among its objects of worship, because the moon was regarded as the efficient cause of growth in animals and plants[3]. In Babylonia the moon was assigned, for the same reason, an equally important place. During the 'Month of the Moon' (the latter part of March and the beginning of April), a thirty-days' fast was kept, in order to secure the favour of the Moon-god for the vegetation of the approaching season[4]. According to the Book of Nabathaean Agriculture, Adam, the first cultivator of the soil, taught the worship of the moon as an essential part of agricultural practice[5]. In the ancient religion of India embodied in the Vedas, the moon, when invoked as the giver of abundance, took precedence of the Sun[6]. These indications of an early Moon-worship among cultivators of corn in

[1] Plutarch De Is. et Osir. p. 367: Τὴν σελήνην γόνιμον τὸ φῶς καὶ ὑγροποιὸν ἔχουσαν, εὐμενῆ καὶ γοναῖς ζώων καὶ φυτῶν εἶναι βλαστήσεσι.

[2] De Aug. Scient. Lib. iii. cap. 4: 'Videmus enim in plantationibus et seminationibus et insitionibus aetatum lunae observationes non esse res omnino frivolas.'

[3] Jablonski, Pantheon Aegyptiorum, vol. ii. p. 9.

[4] Chwolson, Ssabier, vol. ii. p. 36.

[5] Id. p. 454, p. 724.

[6] Rig-Veda, Sec. ii. ch. 8, Hymn 4. etc.

the Old World have an interesting parallel in those hotter tracts of the New World where the manioc is the primitive staff of life, and where maize, as has been already shown, can be grown at all times of the year, the time required for the ripening of the crop not usually exceeding two months [1]. The solar reckoning is here of no importance, for it is unnecessary that any regard should be had to the time of year in the planting and the ingathering of the crop. The natural belief in lunar influence here prevails without modification. We accordingly find that throughout these districts the Moon is recognised as the principal object of worship, and that plantations of manioc and maize are assigned to it, in recognition of the part which it plays in the production of the crop [2]. The worship of the moon in preference to the sun was general among the Caribs, and perhaps among most of the other maize-growing populations of the tropical forest districts of Eastern South America: and precisely the same thing occurs, under the same physical conditions, among the aborigines of the hottest tracts of Peru, the northern valleys of the Yuncapata. The Indians of Pacasmayu and the neighbouring valleys worshipped the Moon as their principal huaca. The *Sian*, or 'house of the Moon,' at Pacasmayu, was the principal ccoricancha of this district: sacrifices similar to those which in the sierra were offered to the sun—maize-flour, chicha, cotton cloths, and children—were offered to the Moon-god in order that the crops might thrive. When challenged to defend their peculiar religious system by the sun-worshippers of the sierra, the Indians of Pacasmayu were at no loss for arguments. The moon, they contended, must necessarily be more powerful than the sun, because the latter only shone by day, while the former shone not only by night, but in the day-time also: the moon, moreover, sometimes eclipsed the sun, but the sun never eclipsed the moon. When the moon disappeared in the interval between two lunations, it was supposed that he had gone to the other world to inflict punishment on the wicked [3].

[1] Ante, p. 338.

[2] See note p. 437 ante.

[3] Calancha, vol. i. p. 552.

Book II. *Aboriginal America.* Worship of the Sun.

From the close correspondence which subsists between those religious conceptions which are associated in the New and the Old World respectively with minor natural objects, a similar resemblance might be anticipated in regard to those relating to the Sun, of all natural objects the greatest, the most imposing, the most important in its relation to human life. Such is in fact found to be the case: in each of the three advanced districts of America the worship of the Sun had at the time of the Conquest a prominence at least equal to that which it once had in the principal civilisations of the Old World. Sun-worship is distinguished among the various forms of religion by its capacity for adapting itself to the peculiar needs and ideas of all grades of advancement. If the Sun is not worshipped by the lowest savages it is simply because worship itself is altogether unknown to them: thus the peninsular Californians, according to Baegert, gazed stupidly on the sun, moon, and stars, as cattle might be supposed to do[1]. When, however, the savage has once begun to exercise his powers of observation, and to question himself as to the nature and origin of things, he identifies the Sun as the proximate cause of many phenomena with which he is familiar. The Sun daily arouses the world to life; it communicates its own heat to objects which are exposed to it. Heat and life the savage knows to be correlative, both in his own case and in that of the wild animals on which he partially subsists. Hence he naturally concludes the Sun to be the ultimate cause of all animal life which exists on the earth, and sacrifices to it accordingly a portion of the flesh and blood of his game. This conception survives and becomes more prominent in the pastoral stage: the herdsman regards the Sun not merely as the regulator of the year and as the renewer of pasturage for his cattle, maintained with difficulty through the winter, but as the positive source of their animal heat, growth, and vitality. The herdsman is usually an enthusiastic votary of the Sun: both in the New World and the Old he sets apart herds which are exclusively intended as the Sun's

[1] Nachrichten von Californien, p. 170.

sacrifices. To the cultivator of corn, in those temperate districts where, as has been shown, the finest and most abundant crops are always yielded, the Sun is of even greater importance. Without observing the Sun, agriculture would here be impossible. The annual changes in its place on the horizon constitute the calendar: the plant only flourishes when the air and soil have been warmed by its rays: its heat alone can ripen the crop and render it capable of storage. The cultivator of the soil, like the rest, offers sacrifices of food to the Sun. The warrior, still adhering to and developing the view of the Sun's properties which originated with the savage hunter, regards the Sun as the source of animal force and courage: he considers that his superiority over his enemies and inferiors is mainly due to something which has been imparted to him by the Sun. He sacrifices to the Sun captives whom he has taken in war, and whose lives he has spared for the purpose of slaying them formally as offerings to this powerful god. In later stages, when the ideas of intellectual and moral superiority have been formulated, the Sun is worshipped as the sustainer of these qualities by those who claim in a special sense to possess them. Every Brahman in India is bound to offer daily adoration to the Sun, as the sustainer of that superiority over the rest of mankind which belongs to his caste.

The Sun and the Atmospheric Gods.

Alike in the New World and the Old we trace a distinct rivalry between the Sun, as an object of worship, on the one hand, and the gods of the atmosphere on the other. Among certain peoples, the supremacy in this rivalry appears to have finally remained with the atmospheric gods: while others, owing to some cause which must evidently be sought in their local circumstances, have always preferred the worship of the Sun. In Mexico, the most advanced district of America, the Sun was regarded as the cause of material forces, the sustainer of all nature: those uncertain and fluctuating causes which mainly affect the lives and fortunes of men were considered to be under the control of Tezcatlipoca. Hence, while the Sun had an important place in the general religious system, the personal devotion

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of the Mexicans was concentrated on the great god of the Air: possibly this supremacy of the latter power is embodied in the legend according to which Tezcatlipoca drove the Sun-god Quetzalcohuatl from Tollan. In Peru no corresponding conception existed: and the principal atmospheric god, the Thunder-god, always occupied a strictly subordinate position to the Sun-god, who was in his turn subordinated to the Creator-god Pachacamac. In New Granada the Sun-god had no rival; the worship of the terrestrial goddess of rain was concurrent with that of the one great god of the sky. While Sun-worship in itself may generally be taken as a test and measure of advancement—for among peoples whose main reliance is on natural sources of subsistence it only exists in a rudimentary form—no absolute conclusion as to the degree of advancement can be drawn from its prominence or its preponderance over other forms of religion. This relation appears to depend to some extent on local circumstances. Where rain is a necessity for the crops, as in Mexico, there the atmospheric gods are of the first importance; where this is not the case, the Sun takes the position among the objects of worship which belongs to it in virtue of its supreme position among natural objects. Peru resembles Egypt and Babylonia in its independence of the atmospheric water-supply, for the Yuncapata, like those districts, is practically rainless, while the valleys of the Sierra are rendered independent of the rainfall by the facilities which exist for irrigation. It is in Peru accordingly, among the advanced districts of the New World, that the worship of the Sun was most systematically practised, though the mythological development which occurs in Mexico is here entirely wanting. In Peru the Sun was considered as a strictly natural object, having, however, a fundamentally human nature. In Mexico, as in the Old World, the instinct which prompts man to create a fictitious past for the objects of his worship had at the time of the Conquest long been actively at work: the legend of Quetzalcohuatl, the Man of the Sun, reminds us of those of Osiris, Apollo, and Vishnu.

It is scarcely necessary to say that the real nature of the

Nature of the Sun.

Sun is unknown in the stages of advancement now under discussion. Probably the first definite idea which is formed on the subject is that the Sun is an animal; this idea underlies every form in which the Sun was conceived by the advanced peoples of America. Its prominence among natural objects, the regularity and ease of its motion, guided, according to all appearance, by some powerful intelligence, place it in the highest rank of animals: doubtless the savage sometimes considers it to be a man, who has assumed this guise in order to procure subsistence more easily. The Ottawas regarded the Sun as a man, though one of a very superior kind to themselves[1]. When the conception of spirits is formulated, the Sun is naturally considered to be a spirit; but whatever he may be, he is regarded as undoubtedly a living creature[2]. The heavenly bodies are often considered by early man to be animals which belong to the upper world: such must clearly be the case with this unique body, radiating heat, the symbol of vitality, in a degree vastly disproportionate to its apparent size; endowed with the power of locomotion; retiring to rest at night, soaring through the sky by day; apparently seeing, hearing, and understanding, perhaps controlling, whatever happens on the earth. The Sun, moreover, manifestly eats and drinks; this is enough to remove all doubt, if doubt could exist, as to its nature. Liquids, when exposed to it, are quickly absorbed; solids of organic origin are sucked dry, and reduced in bulk; their softer parts, such as are usually consumed by other animals as food, are turned to dust. The Sun, it is evident, eats and drinks daily, like any other animal; the quest of food is probably the purpose of its daily journey over the earth. In this it obeys the universal law of living creatures, including man: they sleep by night, wandering forth with the object of procuring sustenance during the day. It is equally evident that, like other animals, it has its seasons of want and of abundance. Well does man know, by long experience, what is implied in the alternative of want. It means decrease in vital heat

[1] Charlevoix, Hist. de la Nouvelle France, ed. 1744, vol. i. p. 394.

[2] Hence the Peruvian epithet 'Causac Inti' (='Living Sun,' Ollanta, l. 76).

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and energy; in the powers of self-defence, of procreation, of resisting the evil spirits who cause disease; after prolonged hunger these malignant beings crowd around him, no longer invisible, mocking his distress, threatening, and ultimately inflicting, the final calamity of death itself. Is the Sun subject to the same law? Undoubtedly. When the Sun is eclipsed, evil spirits have attacked him: this phenomenon is anxiously watched, for it is a struggle for life between the Sun and his enemies. Nor is it only on these exceptional occasions that the life of the Sun is apparently in peril. During one half of the year he appears, like man himself, to be engaged in a struggle to regain the vital force which during the other six months he has been steadily losing. When the return of spring is later than is usual, or the heat of summer does not reach its average, the vitality of the Sun appears to fail. It may be that he is growing old; that the time is approaching when he will no longer regain his power in the spring, when the natural sustenance of men and animals will consequently fail, when the corn will neither germinate nor ripen in the chill earth. The life of the Sun then, like that of man, is a contest with want of food, with the symptoms of impending old age. In this struggle it is man's obvious interest to assist him: man must feed the Sun! Why not? He feeds, as we have seen, other benevolent beings who assist him in the great struggle for existence: they accept his sacrifices, and requite him with their active help. Men, and these other benevolent beings, invisible though they are, constitute one great incorporated society, bound together by the Covenant of mutual services, and having for its primary object the provision of food. The Sun is accordingly admitted into this society: like its other members, he receives regular sacrifices of food.

Water the natural food of the Sun.

The early history of the Sun and of man, it thus appears, are strictly correlative: the Sun, like man himself, is transferred from a natural to an artificial basis of subsistence. Previous races of men, in the state of savagery, have perished for lack of food: according to the mythical cosmology of Mexico, one or more previous Suns had perished likewise. The first Sun, according to the Mexicans, had

only fed on the moisture derived from the earth. This extremely natural theory of the Sun's nutrition is encountered in the Old World at a time long subsequent to the beginnings of exact science. Fire, it was argued by philosophers, cannot subsist without fuel: the sun, moon, and stars must be nourished by the moisture which they draw up from the earth and ocean. Cleanthes assigned as the reason why the Sun never passed the limits of the tropics, that if he did so he would get too far away from his food[1]. With this theory the doctrine of the successive destructions and renovations of the world, generally known as the 'vicissitude' or 'alternation of nature' (vicissitudo rerum) stood intimately connected. The Sun, it was supposed, ever drawing up more and more of the earth's moisture, became in the course of ages surcharged with nutriment, and burned with greatly augmented force. The earth, robbed of its moisture, was at length set on fire by his rays, and all animal and vegetable life was destroyed. Deprived of his watery food, the Sun now burned less fiercely, while the watery element on the earth's surface was gradually replaced, and in its turn increased until the ocean rose and swept in a deluge over the earth. The Sun now once more drew from the floods abundant supplies of nutriment, regained its ascendancy, and again destroyed the world by fire: the alternation of flood and conflagration proceeded as before. The last destruction of the world had been by water: the next, then, would be by fire[2]. It is easy to trace this popular belief to its origin. Continued droughts or rains, in which the Sun appears either to be gathering an unwonted ascendancy, or to be losing his original force, give rise to apprehension as to their consequences, even when the regular annual recurrence of

[1] Cic. de Nat. Deor. Lib. iii. c. 14: 'Ita fit ut ne ignem quidem efficere possitis aeternum. Quid enim? non eisdem vobis placet omnem ignem pastus indigere nec permanere ullo modo posse, nisi alatur; ali autem solem, lunam, reliqua astra aquis, alia dulcibus, alia marinis? Eamque causam Cleanthes affert, cur se sol referat, nec longius progrediatur solstitiali orbe, itemque brumali, *ne longius discedat a cibo.*' The equatorial zone, it will be remembered (ante, p. 35), was understood to be occupied by the ocean, which separated the northern oikoumenê from that inhabited by the Antipodes.

[2] Macrobius, In Somn. Scip. Lib. ii. ch. 10.

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the seasons has been discovered. Man naturally speculates on the ultimate effects of such visitations, if prolonged beyond a certain period: the one he thinks must necessarily end in a conflagration, the other in a deluge. Tradition positively asserts a deluge as a comparatively recent event: it is easy to supplement this tradition by inferring a previous destruction of the world by fire, and reasoning from this to another, very shortly, perhaps, to happen.

Water-Sun of Mexico.

The first Sun, according to the Mexicans, having no other nourishment than the water which it absorbed from the earth, was itself nothing but a watery mass: hence they called it Atonatiuh, or the Water-Sun[1]. Drawing to itself, in the course of ages, enormous quantities of water, it became at length overloaded, and ultimately discharged the whole mass of its waters on the earth, causing a general destruction of animal and vegetable life. Sometimes the Water-Sun was identified with the male or female Tlaloc: one of these deities is occasionally depicted sailing through the air in the Sun's place. This is probably a comparatively recent gloss upon the original legend: the conception of a mass of atmospheric water stored up in the sky to be in due time poured forth on the earth, appears to have preceded in order of time that of a special god of rain. The Mexicans regarded this watery mass as a true Sun; it traversed the heavens daily, absorbing and giving moisture, watching and perhaps controlling all that took place on the earth. For the Water-Sun, like its fiery successor, had human features. It is admirably depicted in one of the Mexican picture-rolls which have been preserved[2]: here we see the vast globular mass, instinct with animal vigour, drawing up water through its many sinuous limbs, which resemble those of some huge octopus. At length it discharges its contents, through an enormous mouth, in a continuous stream upon the earth; in this stream men and other animals are seen struggling for life, but irresistibly swept away.

[1] *Atl + tonatiuh.*

[2] Codex of the Borgian Museum, p. 3 (Kingsborough, Antiq. of Mexico, vol. iii. part 1).

It is not unnatural that this conception of a general destruction of terrestrial life, when once formed, should be extended to those other elementary physical forces which man learns in the course of time to recognize. Besides the destruction of the world by flood, a similar catastrophe was said by the Mexicans to have been once wrought by earthquakes; another by fierce blasts of wind; another, as in the secular mythology of the Old World, by fire; on another occasion, it was said, the vault of heaven itself had fallen in and overwhelmed all that had life on the earth[1]. These catastrophes were traced to some defect in the Sun, or the being which had occupied the place of the Sun during those ages which they had successively brought to a close: and the names of an Earth-Sun (Tlatonatiuh), a Wind-Sun (Ehecatonatiuh), and a Fire-Sun (Tletonatiuh), were employed to denominate the periods which these catastrophes had thus terminated. According to other accounts, the great gods Tezcatlipoca and Quetzalcohuatl, and the primitive Fire-god Xiuhtecuhtli had each endeavoured, but without success, to execute the functions of the god of day. One of the ancient Mexican pictures represents this primitive Fire-god, the Phaethon of the New World, floating in the air as the Sun: the fiery colour of the atmosphere hints at the approaching catastrophe[2]. As a result of these disasters, it became at length clear that a new god must be produced for the express purpose of fulfilling these functions: the result was the creation of the existing Sun. These intermediate Suns, however, appear to have been sometimes omitted from the cycle of myths. In the series of pictures which has been above referred to the creation of the existing Sun follows immediately upon the period of the Water-Sun: the floods caused by the deluge are still to be seen when the new Sun ascends the heavens.

Other intermediate Suns.

The traditions of Mexico, though they vary in some particulars as to the mode of creating the new Sun, that which still rules the heavens, are unanimous as to his

Creation of the Sun.

[1] Gomara, Conquista de Mejico, ch. 215.

[2] Cod. Vaticano, Tav. ix. (Kingsborough, vol. ii. part 1).

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nature: he is essentially a voracious animal, a being who chiefly lives on animal food. Originally he was a man: he was transformed into the Sun by the action of fire, and received the immense degree of vitality which is necessary to his functions from the blood of the gods, voluntarily shed for the purpose. The gods met together, for the purpose of making a Sun, in the place still called Teotihuacan, the 'place of the coming of the god.' Here they made a great fire, and signified to their votaries that whosoever first leaped into it should rise from the flames as the new Sun. The Sun rose accordingly from the midst of the fire, but was powerless to ascend into the sky. In order to give him the necessary force, the gods resolved to sacrifice themselves, in the manner usual in Mexico. This was done accordingly by the god Xolotl, who had already been their agent in the creation of man, and who lastly performed the act of sacrifice upon himself: the Sun then ascended the sky in triumph [1]. Previously to the sacrifice, the gods had handed their dresses to their votaries, who were henceforth to wear them as their representatives: this tradition, it will be observed, explains the peculiar system of representation which runs through all the religious ceremony of Mexico. According to another tradition, the creation of man was subsequent to that of the Sun: men were in fact created to be the food of the Sun, and were directed to fight and kill each other, in order that the Sun might eat and live [2]. The old Mexican painters portrayed the Sun as a vast red globe furnished with a head and limbs, ascending to the sky while two gods offered him a sacrifice of hearts [3]. These mythical accounts of the creation of the Sun are in accordance with the general Mexican theory of things. The imperfect suns of former ages having perished, the method by which the superior vitality of the present Sun is maintained naturally comes to be regarded as the method by which that vitality was originally communicated to it. The gods were con-

[1] Mendieta, Hist. Ecl. Ind. Lib. ii. ch. 2.

[2] Mexico por sus Pinturas (Icazbalceta, Nueva Coleccion, vol. iii. p. 235).

[3] Codex of Borgian Museum, p. 4.

sidered to be equally interested with mankind in the maintenance of the Sun in vigour and activity: it therefore received a portion of the human sacrifices which were offered to other deities. These victims, it will be remembered, were the human substitutes or embodiments of the deities to whom they were sacrificed. The Sun was thus nourished with the blood of the gods themselves: it is easy to see that this practice may easily have given rise to the myth according to which it was originally endowed with life by the same means.

Worship of the Sun by hunter-tribes.

In Mexico, contrary to what is found to be the case in Peru, food-sacrifices to the Sun were of great antiquity; the Otomi hunters, the earliest known inhabitants of Anahuac, usually offered to the Sun part of the blood of their game before eating the flesh. It is unnecessary to repeat in this place the explanation which has been given, on a previous page[1], with regard to offerings made by hunters to the spirits of the chase: it is obvious that when the Sun has been recognised as the original source of animal life, and as himself an animal in need of sustenance, the same motives must prompt the hunter to make him similar offerings. Sun-worship was general among the tribes of Eastern North America, who were at once hunters and maize-growers. It is not easy to apportion its significance as between these two pursuits: among other indications, however, the general use of tobacco as an offering to the Sun in the northern districts suggests that Sun-sacrifices were here connected rather with agriculture than with hunting[2]. Among the hunting and maize-growing tribes of South America Sun-sacrifices were sometimes made with the blood of game: the Diaguitos dipped feathers in it, and exposed them in the sunshine as an offering to the Sun[3]. Such instances do not conflict with the general principle which may be laid down with regard to organised Sun-worship in America, that it prevailed in proportion to the reliance on maize as an annual crop: and

[1] P. 393.

[2] De La Potherie, Hist. de l'Amérique Septentrionale, vol. i. p. 121.

[3] Charlevoix, Hist. du Paraguay, Lib. iv.

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it entirely accords with this that the regular worship of the Sun was not generally practised in the Peruvian sierra previously to the conquests of the Incas, by whom it was established concurrently with the cultivation of maize.

Sun-worship of the Incas.

The name Inca means 'People of the Sun' (Inti): in the latest historical times they usually invoked and described the Sun as their Father (Inti-yaya). Neither this expression, nor any other indication of the connection which Incas claimed with the Sun, can be taken in a literal sense. Though the Incas personified the Sun as a man for the purpose of worship, it is certain that they never assumed to be actually descended from him as an ancestor: the name of Inca, like that of Intip-churi, or Child of the Sun, by which they were addressed, was merely a 'strong name,' or title of honour[1]. The Incas, like all the other inhabitants of the Peruvian sierra, considered their first parents to have come forth from the soil, and to have been made by the Creator of all things in Tiahuanaco, whence they had proceeded to the cave of Paccari-tampu as their paccarisca[2]. There are, moreover, distinct indications that this assumed connection with the Sun was not embodied in a religious form until a comparatively recent date. The Sun invariably appears as the second in their triad of great huacas, the Creator, Sun, and Thunder. In an ancient song preserved by the Indian writer Salcamayhua the Apu-Ccapac-Inca is saluted by a chief of the Collas as a worshipper of the Creator, in direct contrast to the fact that he himself, the Colla chief, is a worshipper of the Sun, whose richly-adorned image he brings with him when he visits Huira-cocha-Inca at Cuzco[3]. It accords with this that in the earlier part of the legend of Pachacutic, the young chieftain invokes the Creator as his god and father, and that the Creator appears to him and addresses him as his son[4]. It is only after his victory over the Chanca chief Uscohuillca that Pachacutic appears as a votary of the Sun: when he

[1] Cieza de Leon, pte. ii. cap. 6.
[2] Ante, p. 462.
[3] Tres Relaciones, p. 268: Markham, Rites and Laws, p. 90.
[4] Betanzos, Suma y Narracion, p. 35: Markham, p. 91.

introduces formal Sun-worship as part of the Inca ritual, this change is ascribed to the fact that the Sun appeared to him in a dream, and addressed him as his child[1]. It also accords with this traditional assignment to the Creator of the chief place among the great huacas of the Incas, that the worship of the Sun was always strictly subordinated to that of the Creator, and that the Creator, and not the Sun, was chosen by Huayna Ccapac as the exponent of his policy of monotheism[2]. What appears to have chiefly lent countenance to the erroneous view that the worship of the Sun was the predominant form of religion in Peru is the fact that permanent provision was made for the sacrifices of the Sun before a similar provision was made for those of the other huacas, and that such a provision was always made, as a matter of course, wherever the conquests of the Incas extended. Hence all lands dedicated to religious uses came to be called 'lands of the Sun.' In some places all the land so designated was in fact devoted to providing sacrifices for the Sun: elsewhere this denomination included lands assigned to religious purposes generally[3]. Similarly it came to be the practice to describe the women who were assigned to the service of the huacas generally as 'Women of the Sun,' though only a certain proportion of those chosen for this general purpose were devoted to the Sun's service.

Endowments of the Sun in Peru.

When once the Sun has been installed among the gods, it becomes plain that he is practically the most important of all: for this reason, probably, the sacrifices due to him are the first to be placed on a permanent footing. Whatever opinion may be entertained as to other spirits or gods there can be no doubt as to the material reality of the Sun, his direct effect upon human interests, the constant strain upon his powers, the necessity of maintaining him in vigour and activity. The methods employed for this purpose in Mexico and in Peru respectively differ in their details, but they have for their common object the securing of con-

[1] Betanzos, p. 65: Molina, ap. Markham, p. 12.
[2] Ante, p. 455.
[3] Polo de Ondegardo, ap. Markham, Rites and Laws, p. 156.

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tinuous sacrifices to him in perpetuity. In Peru this object was secured by assigning to the Sun, in each pueblo, a specific estate by way of endowment. This estate exactly resembled that of an ordinary curaca, or chief of a pueblo: it consisted, that is to say, (1) of a house, or rather group of houses, surrounding a court; (2) of a chacra or portion of land; (3) of flocks of llamas and pacos; and (4) of a number of wives or women dedicated to the service of the owner. The labour of cultivating the lands of the Sun, like the tillage of the lands of the Inca and of the curaca, originally devolved upon the villagers collectively: in later times when this ancient system had been partially broken up, and a class of predial serfs (*yanacuna*) had come into existence, labourers of this class were assigned to the lands of the Sun also[1]. The maize, coca, and chilli pepper produced by the chacra of the Sun, together with the wool produced by the llamas and pacos of the Sun, were stored in the *Inti-huasi* or Sun's house. It was the duty of the women of the Sun (Inti-huarmicuna) to prepare from the maize daily offerings of food and drink (chicha) for the Sun, to spin the wool into thread, and weave it into the finest stuffs that could be made: these, when completed, were burned in sacrifice. Only a portion of the produce of each estate thus provided for the Sun was consumed in the sacrifices made on the spot: a certain quantity was reserved for the great annual festivals at Cuzco, and was duly carried thither at the proper time on the backs of unshorn llamas selected from the flocks of the Sun, themselves destined to be sacrificed on their arrival. The number of such animals annually brought to Cuzco for sacrifice in the Situa, was enormous, though a hundred thousand, the current estimate, is no doubt an exaggeration[2]. Ample provision was thus made for continuous sacrifices to the Sun not only throughout the Inca dominion, but in the chief pueblo itself.

What constitutes the principal connecting link between

[1] Rel. de Santillan (Tres Relaciones, p. 31).

[2] Molina, ap. Markham, p. 27.

the Sun-worship of Peru and that of Mexico is that in each district human sacrifices were a prescribed part of the Sun's ritual. The same thing occurs in New Granada: it was universally understood that only through the constant sacrifice of human life could the vigour of the Sun be properly maintained. In Mexico, where the Sun was regarded as the source of the force and courage of the warrior, the victims sacrificed to the Sun were mostly war-captives: in Peru they were taken from the same source which supplied the women or wives of the Sun who dwelt in his houses and prepared his ordinary sacrifices. Some writers, beginning with Garcilasso de la Vega, who have sought to idealise the Inca government, to represent it as the model of whatever is just, wise, and humane, have denied that human sacrifices were made to the Sun: some have gone so far as to deny that the Peruvians employed human sacrifices at all. Of this it is sufficient in the present place to say that it is contradicted by the clearest evidence. The duties of a woman, in primitive times, are to dwell in the home and prepare the food of her husband, and to be sacrificed at his grave. The female children who were brought up in Peru for the service of the huacas were destined, some to the one fate, some to the other. It is not strange that when they were confronted with the alternatives of a life of monotonous and hopeless labour on the one hand and an easy death succeeded by endless repose on the other, they often chose to die. Sometimes these voluntary candidates for sacrifice were rejected on account of some physical defect: a woman who had been thus rejected as a victim to the Sun was living near La Paz in 1611. She was known as 'la desdichada,' or the unfortunate one, because the happiness of dying as a wife of the Sun had been denied her[1].

Human sacrifices to the Sun.

Women of the Sun in Peru.

These women or wives of the Sun, together with others who were similarly dedicated to the service of the other principal huacas, were taken from the number of the Acllacuna

[1] Calancha, vol. ii. p. 20: Polo de Ondegardo, ap. Markham, Rites and Laws, p. 167.

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(Selected Ones), a general tribute of female children, regularly levied throughout the Inca dominion. The officials took from each family in the pueblos under their government without any distinction or exemption, such girls as they saw fit at the age of eight years, preferring those who were distinguished for physical beauty and vigour. These were then handed over to the care of bodies of older women known as 'mothers' (*mamacuna*) for the purpose of being duly instructed in the arts of preparing food and drink, and of making clothing. Houses of considerable extent, called Aclla-huasi, or Houses of the Selected, were provided for the residence of the Mamacuna and the education of the Acllacuna in the principal district centres, and were maintained by tributes of food levied in the district. Their education was understood to be completed in seven years: when this time had elapsed, the 'selected ones' were distributed according to their apparent capacities, and the will of the Apu-Ccapac-Inca and his officials. Some were destined to the service of the Apu-Ccapac-Inca himself, either in Cuzco, or in the provincial 'houses of the Inca.' Others were given to his favourites: but a large number were distributed among the principal huacas, the majority, probably, being assigned to the Sun. Many were especially destined for sacrifice: some for prescribed sacrifices made in the course of the year, others for exceptional ones on unforeseen occasions. If the Apu-Ccapac-Inca fell sick, if war was impending, if an eclipse or an earthquake happened, female victims were sacrificed, to propitiate the great huacas.

Development of Sun-worship in Peru.

If the indications which have been above alluded to may be accepted as trustworthy, the actual ritual of Sun-worship, as it appeared in the latest historical times, was of comparatively recent date: it was in fact understood to have been introduced by the great-grandfather of the Apu-Ccapac-Inca who ruled at the Conquest. Some reputed connection of the Sun with Cuzco and its inhabitants was undoubtedly much older. In the latest historical times, the most important huillca in the neighbourhood of Cuzco was a stone figure which stood on the hill of Huanacauri,

at a short distance from the city. This hill was reputed to have been the resting-place, on the way to Cuzco, of the joint-family who emigrated from Paccari-tampu: the idol represented Huanacauri, one of the four brothers, who had been turned to stone in order that he might 'speak with the sun, his father,' and serve as an oracle to the settlers in the valley[1]. This figure, by the direction of the Sun, conferred on Manco Ccapac the name by which he is known, and directed him to found the colony of Cuzco: Manco, having descended thither, took possession of the place accordingly in the name of the Sun[2]. Cuzco, as has already been shown, was sometimes considered to have been created by the Sun himself[3]. It is impossible to avoid the suspicion that this circumstantial statement of the ideas with which the first conquest of the Incas is said to have been connected is founded on the motives of a later age: for it is well known that the extensive conquests made in after times by the Apu-Ccapac-Inca Pachacutic throughout the sierra and the coast, were made in the joint names of 'his father the Sun' and of the Creator, to each of whom he assigned allotments of land and flocks of llamas[4].

Idols of the Sun.

The Colla chief who visited the father of Pachacutic is said to have brought with him an idol of the Sun, richly adorned. The Sun, it thus appears, had been personified as a man by the chiefs of the Collao before any idol represented him in Cuzco: probably this image, like that which was afterwards made by Pachacutic himself, represented the Sun under the figure of a warrior. The same mode of personification will presently be found to occur in Mexico: it is natural that the Sun should be embodied as a man possessing in the highest degree the attributes of authority, force and intelligence. The image of the Sun made by Pachacutic for the purposes of public worship represented

[1] Betanzos, cap. iv.: Cieza de Leon, pte. ii. cap. 28. A portable idol representing the huaca of Huanacauri was used in some ceremonies at Cuzco (Molina, ap. Markham, p. 26). Huanacauri ranked as the fifth among the huacas of the Incas, after the Creator, Sun, Thunder, and Moon.

[2] Betanzos, ubi sup.

[3] Ante, p. 461.

[4] Molina, ap. Markham, p. 13.

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as nearly as possible the figure of the sovereign chief, with certain additions. His attire, including the head-dress and ear-pieces, was copied from that of the Apu-Ccapac-Inca: to the head-dress darts were added, representing the solar rays, and his head was surmounted by that of a puma, whose legs were crossed over his shoulders. Another puma's head appeared between his legs; his neck and arms were encircled by serpents. Such was the figure which Pachacutic, according to the legend, had seen in the crystal which fell into the well of Susur-puquio[1]: it called him by name, out of the water, saying, 'Fear not, my son, for I am the Sun thy father. Thou shalt conquer many nations: therefore be careful to pay great reverence to me, and remember me in thy sacrifices[2].' This Sun-idol, from the circumstance that its costume was that of the sovereign chief, received the name of Punchau-Inca, or the 'Sun-Inca[3]:' it was the image to which offerings were made in the public ritual. The general aspect and name of this image probably gave rise to the ridiculous fable that the Apu-Ccapac-Incas were actually worshipped as gods in their own persons. In this, it is hardly necessary to say, there is no truth. The persons of the sovereign chiefs of Peru always commanded profound respect; more reverence, beyond doubt, was paid to them than to the Tlatoani or sovereign chief of Mexico. Unlike the latter, they received after death honours which scarcely differed from those paid to the gods. This, however, was but part of the system, universal in Peru, of worshipping the distinguished dead; during their lifetime they were merely mortals, the highest among mortals, it is true, but mortals nevertheless.

The Huaina-Punchau—'Young Sun.'

One of the most interesting coincidences between the religious ideas which prevailed in the widely distant districts of Peru and Mexico is that in each the warrior class practised a private and esoteric worship of the Sun, totally distinct

[1] Molina, ap. Markham, p. 12: ante, p. 445.

[2] The Inca, Molina proceeds, took care of the piece of crystal, and afterwards saw everything he wanted in it. This may be compared with the bright stone fetishes or talismans of Central America (ante, p. 481).

[3] Also *Apu-Punchau*: Molina, ap. Markham, pp. 16, 25.

from the public ritual. The traditions of Peru ascribed the institution of these esoteric rites, as well as the invention of the statue before which they were performed, to the great religious innovator Pachacutic. This idol, called the Huaina-Punchau, or 'Young Sun,' represented an infant a year old, moulded in solid gold, clad in a woollen vestment, with golden embroidery; its head-dress, resembling those worn by the chiefs, was surmounted by a golden plate with solar rays, and it was shod with golden sandals. It was placed in the principal apartment of the structure called the House of the Sun, on a wooden bench covered with brilliant feather-work. The method of sacrificing to this singular image is thus described by Juan de Betanzos:

'Being here placed, he caused to be brought a golden brazier; fire being lighted in this, he commanded it to be placed in front of the idol, in the which fire and brazier he caused to be thrown small birds and grains of maize, and chicha to be poured into the said fire. All the which he said that the Sun ate, and that in so doing he gave him to eat: and thenceforth this became the ordinary practice, which the chief servant of the Sun performed, exactly as if he were a person who ate and drank. Thus also especial care was bestowed to serve him diverse foods and kinds of victuals, and in this way they burned them before him, morning and evening, in braziers of gold and silver. And thereafter they did reverence to this idol: but none came within where the idol was, save the principal chiefs, who entered with much reverence and veneration, having removed their sandals, and bowing their heads. The Inca Yupanqui (Pachacutic) entered alone, and with his own hand sacrificed male and female llamas, himself making the fire and burning the sacrifice. When he was thus sacrificing, no chief dared to enter, but all remained in the court, and there without they made their sacrifices, and mochas, and adorations. And in order that the common people might also worship there without, because none might enter there within save the chiefs (and these only in the court), he caused to be placed in the midst of the Plaza of Cuzco, where the gallows now stands, a stone in the form of a sugar-loaf, pointed towards the top and covered with leaf-gold, which stone he caused to be made the same day that he ordered the image of the Sun to be made. The stone was made for the worship

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of the common people, and the image, in the House of the Sun, for the chiefs[1].

Popular Sun-worship in Peru.

The significance of this worship of the Huayna-Punchau, or Young Sun, as a child of a year old, is readily divined. It obviously embodied, so far as concerned the Sun, the desire expressed in the prayer to the Creator, Sun, and Thunder which is so frequently repeated in the rituals, that they would remain for ever young, and not grow old, lest the food of men should cease. The Huayna-Punchau, like the infant solar god of the ancient Egyptians, may also have personified the new birth of the Sun, the recommencement of the year when the winter solstice is past. In the description of the provision made for the popular worship of the Sun the reader will recognise the Inti-huatana, already described[2]. These great Sun-dials, constructed in situations where the rays of the Sun illuminated them during the whole day, were naturally selected as places for making offerings of chicha: when such offerings had been visibly diminished by evaporation, it was said that the Sun had drunk of them[3]. Even this simple form of offering appears to have been usually made through the intervention of a huillac[4]: it accords with this that buildings apparently intended as the dwelling of an official keeper are usually found in connection with each Inti-huatana. It is certain that the peasantry of Peru commonly sacrificed to the Earth, mountains, and rivers, and in general to all the natural huacas, without any official intervention. The fact that offerings to the Sun, like those made to huacas represented by images, were required to pass through official hands, and the exclusion of the people not only from the inner sacrifices in the House of the Sun, but from the general rites of the Intip-Raymi, accord with the fact that the peasantry of the Collao were excluded from the rites of the Sun which were celebrated at his paccarisca of Titicaca. Here, as in the Cuzco district, Sun-worship appears to have

[1] Suma y Narracion, cap. xi.

[2] Ante, p. 350.

[3] Garcilasso, Lib. v. cap. 19: Lib. vi. cap. 21.

[4] Santillan (Tres Relaciones, p. 35).

been regarded as peculiarly the religion of the warriors. We have seen that the chief of Hatun-Colla carried with him an idol of the Sun[1] when he visited the Apu-Ccapac-Inca Huiracocha: so during the revolt of the Collao after its conquest by Pachacutic, the Colla warriors are said to have offered sacrifices of young white llamas to the Sun for success, and to have carried an idol of the Sun during the campaign. This idol fell into the hands of the Incas, and was flung by them, together with the other Colla idols, into the lake of Urcos. The pueblo of this name was the last place in the Collasuyu, or district of the Colla, which was passed on the march to Cuzco[2]; to have carried these images beyond it would have been to affront the local deities of the ancient dominion of the Incas.

Inca occupation of Titicaca.

The rock of Titicaca in the Collao, the reputed place in Peru of the Sun's origin, naturally became an important centre of his worship: the fact that Teotihuacan, the reputed place of the Sun's origin in Mexico[3], was the principal centre of Sun-worship in that district, affords an interesting parallel. At what remote date the worship of the Sun at this celebrated rock originated it is vain to inquire. It may be safely assumed that it was long before the conquest of the Collao by the Apu-Ccapac-Inca Pachacutic, and that the worship of the Sun as a war-god by the Colla chiefs, brought prominently to the notice of Tupac, as we have just shown, in the revolt which he suppressed, was connected with local rites at this rock. It is at any rate certain that Tupac proceeded after the reconquest to institute at this natural centre of Sun-worship rites of the Sun on a new basis, with the obvious intention of securing on behalf of the Incas of Cuzco such exclusive benefits as might be derivable from the exclusive possession of the Sun's paccarisca. According to the local account, as it reached the Spanish clergy who settled at Copacahuana[4], a venerable Colla, dedicated to

[1] Salcamayhua (Tres Relaciones, pp. 288, 289).
[2] Rel. de Santillan (Tres Relaciones, p. 16).
[3] Ante, p. 504.
[4] Fr. A. Ramos Gavilan, Hist. de Copacabana, cap. 4.

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the service of the Sun, had proceeded on foot from Titicaca to Cuzco for the purpose of commending this ancient seat of Sun-worship to the notice of Tupac: the Apu-Ccapac-Inca consequently visited the island, inquired into the ancient local usages, and re-established them in a more regular form. This account the facts already mentioned compel us to reject. The occupation of Titicaca by Tupac rather followed naturally on the suppression of the revolt of the Collao: the worship of the Sun at the place of his origin was henceforth committed to Incas resident on the spot, and was celebrated with Inca rites. The aboriginal inhabitants were removed from the island, and it was converted, as far as possible, into a solar estate. The slopes of the hills were terraced and reduced to cultivation, fine earth being brought for this purpose from distant valleys, in order that maize, the gift of the Sun, might be produced on the soil consecrated to him. Some of the produce was consumed in offerings made upon the spot: the rest was sent to Cuzco, partly to be sown in the chacras of the Sun throughout Peru, partly to be placed in the corn-stores of the Inca and the huacas, as a charm which secured the preservation of the store and abundant crops in the future[1]. A house of Women of the Sun was built, about a mile from the rock, for the purpose of rendering the produce regularly available for sacrifices: for their maintenance, food tributes of potatoes, ocas, and quinua were levied upon the pueblos on the shores of the lake, and of maize upon the neighbouring warmer valleys. For the purpose of protecting this religious colony from aggression on the part of the Collas, a strong military colony, consisting of warriors selected from each of the forty-two principal tribes who owned allegiance to the Apu-Ccapac-Inca, was established at Copacahuana, at the head of which Tupac placed the Inca Sucsu, a grandson of Huiracocha, famous for his skill in war. The annexation of their great huaca, thus

[1] Garcilasso, Lib. iii. cap. 25. The mean temperature of the islands of Lake Titicaca is considerably above that of the surrounding country. The so-called 'Inca-maize,' a hardy variety of the corn, still ripens its seed on the island, side by side with the quinua bean.

secured, completed the subjection of the Collas: they never ventured to revolt again [1].

Inca rites at Titicaca.

The selection of the mitmacuna or colonists of Copacahuana from all the tribes in the Inca dominion had an obvious meaning: it marked the colony of Titicaca, and the rites of the Sun celebrated there, as established for the benefit of the whole country. Nothing in these rites, so far as is known, distinguished them from those which were celebrated by the Incas in other parts of Peru, although Tupac is said to have invented new and extraordinary sacrifices to signalize his occupation of the island. What appears to be certain is that human sacrifices, as everywhere else, formed part of the rites [2]. The occupation of this island added one more to the famous places of pilgrimage which were scattered through the Inca dominion from Quito to Potosi. Titicaca at the time of the conquest was probably more frequented than Pachacamac itself: these two places were regarded as the principal shrines of the two great huacas, the Creator and the Sun, respectively. A special motive for pilgrimage to Titicaca was to sacrifice to the Sun as the source of physical energy and the giver of long life: and he was especially worshipped here by the aged, because he had so long preserved their lives [3]. Houses were built at Copacahuana, to receive the pilgrims who flocked to Titicaca from all parts, and large stores of maize were provided for their food. Before embarking on the balsa, or raft of totora, which conveyed him to the island, the pilgrim confessed his sins to a huillac; further confessions were required at each of the three sculptured doors which had successively to be passed before the sacred rock was reached. The first door (Puma-puncu) was surmounted by the figure of a puma: the others (Quenti-puncu and Pillco-puncu) were ornamented with feathers of the different species of birds commonly sacrificed to the Sun. Having passed the last portal, the traveller beheld, at a distance of

[1] Cieza de Leon (Part II, chap. 52) wrongly ascribes this occupation of the island of Titicaca to Pachacutic.

[2] Calancha, vol. ii. fo. 12. Id. fo. 12, verso.

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two hundred paces, the sacred rock itself, the summit glittering with leaf gold. He was allowed to proceed no further, for only the officials were permitted to set foot on it[1]. Before departing the pilgrim received a few grains of the sacred maize grown on the island. These he carefully preserved for the purpose of placing them with his own store of corn, which they were understood to possess the virtue of protecting from decay. The Indian who possessed a single grain of the Titicaca maize believed that he would never want food during the rest of his life[2].

The Sun and maize-cultivation.

The importance thus attached to the maize produced at the place of the Sun's origin furnishes the best illustration that could be adduced of the close connexion which subsisted in Peru between maize-agriculture and the worship of the Sun. These two practices were correlative: the Incas everywhere introduced them concurrently. Wherever they extended their dominion, their first care was to plant a chacra with maize for the Sun, their father, to build him a house, and to assign women for his service. It was on the solar chacra that the labours of the agricultural year were commenced. This was tilled and planted by the common labour of the village before the rest of the land was touched[3]: and the Ccollcampata, part of the solar estates, and reported to be the place where maize was first cultivated in Cuzco, was always planted by the Incas, with the Apu-Ccapac-Inca himself at their head, before the general agriculture of the year was begun. The Sun himself, by the shadow on the great horizontal dials, indicated the time of planting: the officials who guarded them announced the precise day to the people, and fasted between the planting and the appearance of the shoots above the ground[4]. This close connexion between Sun-worship and maize-cultivation, and the identification of both with the extension of the Inca dominion, undoubtedly suggested to the Apu-

[1] Ramos, ch. 7, &c.

[2] Garcilasso, Lib. iii. cap. 25.

[3] Garcilasso, Lib. v. cap. 2.

[4] The *tarpuntaitacuna*, or 'Fathers of the Seed,' are described by Molina in one place (Markham, p. 20) as officials of the Sun. From other passages (pp. 17, 41) it would appear that the officials of the great huacas generally were known by this name.

Ccapac-Inca Tupac the idea of cultivating maize at the place of the Sun's origin. Maize is rarely cultivated at a greater elevation than 8,500 feet above the sea: beyond this height the crops are poor, and in most cases fail to ripen. To grow maize at an elevation of nearly thirteen thousand feet, in the midst of a district where its cultivation is impossible, appears even to us to have been a remarkable feat: we may well believe that it was commonly regarded, in the times of the Incas, as a special sign of the immense power of the great solar god, of his bounty as the giver of food to man, and of the favour with which he regarded the establishment of the new rites at the place from which he had ascended into the sky.

Sacrifices to the New Sun.

At the winter solstice, as we have mentioned[1], the Intip-Raymi, or great festival of the Sun, was celebrated by the Incas in Cuzco. In connexion with it, the Tarpuntaita-cuna, or sacrificing Incas, were charged with a remarkable duty: they journeyed eastward for the purpose of meeting him on his way. On the principal hill-tops between Cuzco and Huillcanuta, on the road to the rock of Titicaca, burnt-offerings of llamas, coca, and maize were made at this feast to greet the arrival of the young Sun from his ancient birth-place: more than twenty of these places of sacrifice are enumerated by Molina[2]. Nothing in the religious rites of the ancient Americans, nothing, perhaps, in those of all humanity affords a more striking picture than the celebration of the solar sacrifice on these bleak mountains in the depth of the Peruvian winter. At early dawn the celebrants must already have quitted the thatched tampu in the valley below and slowly wended their way, carrying the sacrificial knife and brazier, and leading the white llama, heavily laden with fuel, maize and coca leaves, wrapped in fine cloth, to the spot where the sacrifice was to be made. When sunrise approached, the pile was lighted; the victim was slain and thrown upon it. As the flames gathered strength, and the smoke ascended, the clear atmosphere was illuminated more and more from the east; when the Sun rose above the horizon, the sacrifice was in full blaze.

[1] Ante, p. 349.

[2] Markham, Rites and Laws, pp. 17, 18.

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Hitherto the silence had only been broken by the crackling of the flames, and by the babble of some stream on its way to join the silent Huillcamayu river below. As the Sun rose, the Incas walked slowly round the pile, plucking the wool from the burning carcase, and the monotonous chant went up; 'O Creator, Sun, and Thunder, Be for ever young! Multiply the people, Let them ever be in peace!'

Sun-worship in Mexico.

In Mexico, as will presently appear, exactly as in Peru, the Sun was worshipped in a special sense by the warriors: here, however, contrary to what appears to have been the case throughout Peru, there existed from early times a popular Sun-worship. The Sun filled a larger space in the life of the Mexicans than in that of the Peruvians. The name used to designate the greater gods in Peru (huiracocha), when employed absolutely, indicated the Creator, while the corresponding word in Mexico (teotl) employed in the same way indicated the Sun. To denote any particular time of day the Mexicans pointed, with elevated or oblique arm, to that part of the sky where the Sun would at that hour have stood, simply saying 'Izteotl' (God being here). The fundamental conception of the Sun in Mexico was that he was the actual source of all vital force: hence his name of Ipalnemohuani (he by whom men live). In token of this, it was a common practice, not only in Mexico, but throughout the vast district occupied by the Mexican tribes, from Sonora to Nicaragua, to offer to the Sun the hearts of animals killed for food. The heart, as has been explained, was the symbol of life: the life which the Sun had given and sustained was now restored to him. Each morning, throughout the Quarter of the Gods at Mexico, which was inhabited by hundreds of persons doing permanent or temporary official service to the gods, there was heard a confused noise of whistles, sea-shells, small bells, and drums, mingled with the voices of men and women, saluting the rising Sun: this was followed up by offering to the Sun the hearts of the small birds killed for the morning meal. Nor was this practice confined to those professedly devoted to religious service: it was universal.

Even the hearts of victims sacrificed to other deities were usually offered to the Sun, to symbolize the restoration of the life of which he had been the sustainer.

Mexican Sun-sacrifices.

The general sacrifices made to the Sun, if we may judge by the numerous representations of them found in the Mexican picture-books, were extremely varied: scarcely anything usually eaten for food seems to have been omitted. All kinds of birds, particularly the various kinds of parrots and humming-birds, were considered to be specially appropriate: snakes and rabbits, both of which were common articles of food, were also favourite offerings. Sacrifices of vegetable origin are less common: occasionally two women, dressed in feathers and having birds' heads or masks, are represented making chicha [1], which is offered to the Sun: sometimes chicha appears to be replaced by pulque. The Sun does not disdain fruits and flowers: in one picture seven ears of maize, arranged in a basket, are set before the Sun, who extends his arms to receive them. By far the greater number, however, of these solar offerings consist of blood, the visible embodiment of animal life; crimson hearts, and knives of stone, tinged with blood in half of their length, are the general sacrificial symbols. Human victims are frequently represented: sometimes these are children, more frequently they are persons of full growth. One remarkable picture shows a human sacrifice made to the Sun during an eclipse; the victim is slain on the side where the Sun is darkened. These sacrifices are always received in an uniform manner: the rays of the Sun, sometimes seven, more frequently eight, in number, are represented as long crimson tongues, licking up the blood. Occasionally, as in the sculptures of Palenque and Uxmal, the Sun appears as a human face with the tongue protruded. In the picture-books the more usual representation is a wheel, often brilliant with many colours, the rays of which are so many blood-stained tongues, by means of which the Sun receives his nourishment. Often, in these representations of Sun-sacrifices, the upper part of the wheel is

[1] The Cañari myth, quoted at p. 327, affords a curious parallel: in both cases chicha is made by women in the guise of birds.

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omitted, only the lower half, through which alone the sacrifices are absorbed, being shown. In order to realise the place which Sun-worship occupied in Mexican life, these pictographs must be studied: the lesson which they convey is not to be learned from the pages of the Spanish antiquaries [1].

Motive to Sun-worship in Mexico.

For this intense devotion to the Sun, this daily accumulation of apparently purposeless sacrifices, the Mexican theory of things afforded an entirely sufficient reason. The Sun alone stood between the world and its destruction. We trace nothing whatever of the same kind in the current beliefs of the Peruvians. Peru, indeed, once had its *pachacuti*, or 'overturning of the world,' but this was a thing of the past: it was never supposed that such an event could happen again. The Mexicans, more imaginative, perhaps more logical, had come to a conclusion bearing a certain resemblance to that on which the belief in successive destructions and restorations of nature, in the Old World, had been based. They supposed the destruction of the existing state of things to be impending at the end of each successive cycle of fifty-two years: on the morrow of the day which completed one of these cycles the Sun would fail to appear in the sky. Such had been the termination of the previous secular periods, and notably of that which had preceded the present one, that in which terrestrial life had been destroyed by the great deluge. According to the Peruvian legend, the Sun himself had escaped from the deluge by hiding himself in the rock of Titicaca, from which he had emerged at his creation. According to the Mexicans, as we have already seen, each successive secular period had a particular Sun, or perhaps a god representing the Sun, of its own. The old suns were dead: the present Sun was mortal equally with them. To maintain the Sun, if this were possible, in full vigour, would be to maintain the existing balance of the elements, to assure the con-

[1] See especially the Codex of the Borgian Museum (Kingsborough, Antiquities of Mexico, vol. iii. part I). No description can convey an adequate idea of the terrible ritual which these pictures represent: it seems rather the invention of demons than of human beings.

tinuance of the state of things under which men lived and flourished. Hence these daily sacrifices of food to the Sun: this slaughter of human victims: this inexpiable war with neighbouring tribes, carried on in order that victims might be provided. War, with the Mexicans, incredible as it seems to us, was in truth a solemn religious duty. It was necessary to the maintenance of the existing state of the world, for without war the Sun must die.

The War of Flowers.

Of this extraordinary view of human duty it may be well to adduce an illustration, familiar enough to the readers of early American history, but never, perhaps, placed in its true light. The Spaniards found all the country between the plateau of Anahuac and the Gulf of Mexico under the actual government of the officers of the lake confederacy, with the sole exception of the small mountainous district of Tlaxcallan. The ruling class of this district not only spoke the Mexican language, but were admittedly of the same nation as the Mexicans themselves. Their occupation of Tlaxcallan had been part of the general Mexican migration from the north; like that of Mexico, it had been effected by either dispossessing, or reducing to the condition of serfs, the Otomi aborigines. The soil, cold and mountainous, produced little besides maize, pepper, aloes, and fruits; they had neither chian, cotton, nor salt, and cacao was a luxury utterly unknown. Poor, isolated, and comparatively weak in numbers, there can be little doubt that they would have been glad to make peace with the Mexican federation on any tolerable terms. The latter, on the other hand, might easily have reduced the Tlaxcaltecs to the condition of tributaries: they had long since plundered them of their stores of gold and silver. The Mexicans and Tezcucans, however, waged a perpetual war with the Tlaxcaltecs, for which no pretext whatever could be alleged except that they must have prisoners for sacrifice to their gods. Any Tlaxcaltec who quitted the district was seized and taken to Mexico to be sacrificed as a war-captive. As long as living memory went back, a period estimated at a hundred years, the warriors of the Lake pueblos had annually crossed the boundary, and after encountering some

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feeble show of resistance had returned, taking with them whatever number of captives they required. The task was probably of little difficulty, although, in order to promote skill in fighting, and to encourage the Tlaxcaltecs to offer some real resistance, the invaders were always strictly limited in numbers. The religious rites, it appears, established when the Mexicans faced war at every frontier, imperatively demanded a certain number of captives actually taken from some enemy. The rituals were precise: in some ceremonies the victim must be a slave, in others a tributary or a prisoner of war. War-captives were indispensable to the due celebration of the rites of the tutelar god Huitzilopochtli, of the Sun, the patron god of the Mexican warriors and sustainer of the world, and of various other deities: had Tlaxcallan been annexed, Mexico and Tezcuco would have lost the principal source from which these captives were supplied, and recourse must have been had to the distant frontiers of Panuco or Tehuantepec. These annual campaigns against Tlaxcallan were called 'War of Flowers' (Xochiyaoyotl); the capture of the victims was described in their war-songs as the plucking of flowers, by which their gods were to be refreshed and gladdened [1].

War and Sacrifice in Nicaragua.

This strict dependence of religion upon war for the due supply of the sacrifices, so characteristic of the Mexicans, equally prevailed in the distant Toltec colony of Nicaragua. To the question, Whether the gods subsisted on food, an Indian gave the following answer: 'I do not know. But when we make war, we do so in order to give them to eat of the blood of those Indians whom we kill or take prisoners. This blood we sprinkle on every side, that the gods may eat: for we do not know on what side they may be. We do not know whether they eat it or not [2].' This

[1] Gomara, Conq. de Mejico, cap. 55: Bernal Diaz, cap. 67: Tezozomoc, Cronica, cap. 96: Brinton, Ancient Nahuatl Poems, p. 80, &c.

[2] Oviedo, Hist. de Nicaragua, cap. 2: see ante, p. 468. Nothing further was asked of the Indian who gave this answer, which is given above in its entirety. The answer given to the same question by another Indian, an official of a teopan, was as follows: 'I have heard my fathers say that the gods eat the blood and the hearts of men, and of certain birds. Gum was also burned in their honour: they ate that.' Another witness gave substantially the same answer (ed. Ternaux-Compans, pp. 30, 33).

literal correspondence of ideas between the Mexican of a distant colony on the one hand, and their kinsmen of Mexico and Tezcuco, separated from them during several generations, on the other, shows how completely these conceptions, to us so strange and so revolting, had taken possession of the Mexican mind. It is the more remarkable, because in general the answers given by the Nicaraguans exhibit both religion and mythology, as compared with the religion and mythology of Mexico, in an early stage. They knew nothing of the principal gods who were recognised in Mexico. Their most important deity, the Rain-god (Quiateot), like the rest of the gods, was considered to be a man like themselves; all the gods lived at the end of the world, that is, in that part of the world where the Sun rises. Those who died in war went thither to serve the gods. Of the worship of the Sun himself, and of the Mexican belief that warriors went after death to serve in the house of the Sun, we find no trace.

Sun-worship of the Mexican warriors.

It has been shown in the preceding pages that the Sun was regarded, not only by the Incas, but by the warriors of the cognate tribes whom they ultimately subdued, as a god who gave victory in war. It is clear that this service was recognised in Peru, as in Mexico, by assigning to him as victims a certain number of war-captives. When they conquered any nations, says Molina, they selected some of the handsomest of the conquered people, and sent them to Cuzco, where they were sacrificed to the Sun, who, as they said, had given them the victory[1]. According to one authority, the first sacrifice of this kind was that of the principal chief of the Collao, whom Pachacutic sacrificed to the Sun at Cuzco, on his return from the conquest of the Collao[2]. Of the reality of these sacrifices there can be no doubt: they probably took place at the great War-Stone[3], where the warriors assembled at the beginning of a campaign. This function of the Sun, common to Peru and Mexico, had by far the greater

[1] Molina ap. Markham, Rites and Laws, p. 59.
[2] Balboa, Hist. du Pérou, ed. Ternaux-Compans, p. 55.
[3] Cieza de Leon, Pte. II, cap. 41, 47.

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prominence in the latter district: the Mexican warriors had their own rites of the Sun, their patron god, which were celebrated within the precincts of the building called the Quauhquauhtinchan, or Abode of the Eagles [1]. Twice in each year, when the conjunction of days called Nauhollin [2] occurred, they assembled here for the purpose of sending to their patron god a messenger bearing a present: this messenger, it is scarcely necessary to say, was a war-captive. Affixed to the wall of the principal court of the Quauhquauhtinchan [3], at a considerable elevation, was an enormous representation of the Sun, consisting of a solar wheel and rays of gold, on a background of brilliantly-painted cloth: before it there stood the great stone called Quauhxicalli, or Cup of the Eagles: forty steps led to it from the floor of the court. Four times each day fragrant gums were burnt before this wheel. At noon on the day called Nauhollin a war-captive was led into this court, and placed at the foot of the stair: the colours of his attire represented those of the Sun, to whom he was about to be despatched as a messenger. His dress was of red, striped with white, and white plumes were in his hair. In his right hand he carried a staff, decorated with feathers and strips of twisted leather [4], to represent the staff with which the Sun journeyed across the sky: in his left was a shield decorated with tufts of cotton. On his shoulders he carried a bundle containing eagle's feathers, and a quantity of the various colouring materials used in painting, wrapped in paper of aloe fibre; the purpose of these, it would seem, was to enable the Sun to decorate his face. The prescribed address to the victim ran thus: 'Sir, we pray you

[1] One group of the warriors was called the Eagles: this building served as an armoury.

[2] Nauhollin means 'Four Motions,' the allusion being to the trembling motion of the Sun's rays, to which the generation of all living things was attributed: the symbol employed to indicate this motion was a butterfly. According to Duran (Hist. de las Indias, cap. 88) the two days on which these sacrifices took place were the 17th of March and the 2nd of December.

[3] Duran, cap. 88.

[4] 'Traya en la mano un baculo muy galano, con sus laços y ataduras de cuero, enxertas en el algunas plumas.' These details are given for the purpose of illustrating the solar nature of Quetzalcohuatl (post, p. 532).

go to our god the Sun, and greet him on our behalf: tell him that his sons, and warriors, and chiefs, those who remain here, pray of him to remember them and to favour them from that place where he is, and to receive this small offering which we send him. Give him this staff, to help him on his journey, and this shield for his defence, and all the rest that you have in this bundle.' This the victim formally undertook to do: he then ascended the stairs one by one, pausing on each, under the direction of the conductors of the ceremony, for a prescribed time. Arrived at the top, he mounted on the stone, and repeated his message, turning round from time to time to greet the real Sun, then at its meridian height. When he had finished, the four sacrificing officials ascended the stairs and despatched him, bidding him go to the other world and deliver his message.

Heaven of the Mexican Warriors.

The words 'those who remain here,' in the message to the Sun just quoted, require explanation. The service of the Sun by the Mexican warriors was continued after death: all who died on the field of battle, it was said, were transported to the eastern parts of the sky, and admitted into the house of the Sun, where they dwelt in his presence and served him continually [1]. This may be illustrated from the prayer to Tezcatlipoca in time of pestilence, which is given by Sahagun. The death-dealing god is besought to spare the warriors, because 'it is better to die in war and go to serve food and drink in the house of the Sun, than to die in the plague and go down to the underworld [2].' In time of war the god of life and death was besought that the warriors who fell might enter the house of the Sun, there to join those who had died on the field of battle in past times, to rejoice continually with the Sun, intoxicated with delight, keeping no account of day and night, of years and seasons, and sucking continually the juice of pleasant flowers [3]. The significance of this last expression has been already shown [4]. The dead warriors, gathered in the house

[1] Occasionally the Sun himself is represented as a warrior carrying the spear-thrower and sheaf of darts.

[2] Sahagun, Lib. vi. cap. 1.

[3] Id. cap. 3.

[4] Ante, p. 524.

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of their patron god, the Sun, were to be partakers of the cannibal feasts which were offered to him on earth. This conception partly explains the desperate bravery which the Mexican warriors displayed in the field. They fought, according to the Spaniards, like wild beasts, or mad dogs: 'although we killed and wounded great numbers,' says Bernal Diaz, 'I verily believe that they earnestly desired to die fighting[1].' The writer was nearer to the truth than he supposed: to die fighting was to secure admission to the House of the Sun, and participation in its joys. Such was the secret of the extraordinary valour of the Mexican warriors. It recalls the faith of the Moslem soldier in our own day, for whom death while fighting against the infidel is a sure passport to paradise.

The Quauhxicalli.

The Quauhxicalli, or Cup of the Eagles, mentioned in the preceding account of the sacrifice of the solar messenger, was a species of sacrificial stone or altar peculiar to the worship of the Sun and the solar idols. These stones were placed in the open air, in enclosed courts called Quauhxicalco, or 'place of the Quauhxicalli': at least four such enclosures existed in the Quarter of the Gods at Mexico. One of these great solar altars is preserved in the National Museum of Mexico. It is a large, low circular mass of basalt, on the circumference of which fifteen groups are sculptured in low relief, each representing a Mexican chief receiving the submission of a prisoner in the field. The latter presents to his captor a flower, the symbolic meaning of which the reader knows: the warrior tears the plumes from the captive's head. Above the figure of the captive in each group a different symbol is carved: these symbols indicate the fifteen pueblos from which war-captives were obtained by the Mexicans at the time when the stone was erected. What is most significant is that the top of the stone is sculptured with an immense solar disk, having eight rays. The middle is hollowed out, forming the receptacle for blood from which the altar takes its name: the Sun was thus literally fed with the life of

[1] Conquista de N. España, cap. 155.

the victims. The Quauhxicalli of the Museum has been sometimes supposed to be one of the gladiatorial stones, called *temalacatl*, which were commonly provided in the pueblos of Anahuac. The gladiatorial stone resembled the Cup of the Eagles in shape; but the purpose of each was distinct, although from the circumstance that the two were sometimes placed side by side, it may be conjectured that the latter was in fact derived from the former. Both were employed in the equinoctial solar sacrifice, which will be presently described.

The Temalacatl.

The gladiatorial combat was in theory a provision made in the pueblos of Anahuac for giving the war-captive, previously to sacrifice, a chance of escaping his fate by proving his valour. For this purpose a circular structure of stone was erected, somewhat exceeding the height of a man, and having a platform at the top. In the middle of this was placed a round stone of immense size, flat at the top and bottom, and pierced with a central hole, through which a rope was passed: it was called the *temalacatl*, or Spindle-Stone[1]. To this stone the captive, armed with a shield and club, was conducted by an attendant warrior, whose business it was to attach him to it, and to cheer him by shouts and howls in the contest which ensued. The warrior who had captured him now mounted the platform and engaged the captive in combat. If the latter succumbed, as was usually the case, he was at once handed over to the officials for sacrifice: if he succeeded in worsting his captor and six other opponents in succession, his life was spared and he returned to his people[2]. Such was the theory of the gladiatorial combat: it is however obvious that in practice the chances were so overwhelmingly against the victim that few, if any, of

[1] The small spindle used by the Mexican women was made of burnt clay. The account here given, which is usually accepted, derives some confirmation from the statement made by its anonymous author to the effect that on one occasion the principal war-chief of Tollan having been captured and taken to Huexotzinco, and having fulfilled the condition which entitled him to liberty by defeating seven antagonists in succession, had nevertheless been sacrificed, contrary to the universal custom.

[2] Rel. della Citta del Temistitan (by a soldier of Cortes), Ramusio, Tom. III, p. 305.

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those who were doomed to it could have escaped. Its real purpose was simply to afford a savage kind of sport to the Mexican populace. One great *temalacatl* stood in the midst of the Quarter of the Gods: another was used, possibly in connexion with the identical solar altar of the Museum, in the solar rites which were annually celebrated in Mexico at the vernal equinox.

Solar rites of the Vernal Equinox.

These rites, performed before an idol whose ordinary name seems to have been Totec (Our Great Chief), were celebrated not in Mexico alone, but throughout Anahuac. Totec is usually ranked among the minor Mexican gods: more victims, however, were sacrificed at his festival than at any other. He obviously belongs to the class of solar deities: his separate embodiment in Mexico as a substantive god appears to be due to the fact that his worship had been borrowed from the people of a neighbouring district, though the rites of this worship were thoroughly Mexican in character. The principal festival of the Great Chief, celebrated in the spring, seems to have commemorated the communication of vitality to the Sun by the slaughter of all the gods[1]: it is at any rate certain that a slave was sacrificed on this occasion to represent each of the principal gods worshipped in each pueblo. The equipment of Totec resembled that of the solar messenger: he carried a staff in his right hand, and a shield in his left. The victims of the festival, attired like the various deities whom they represented, were conducted to one of those enclosed courts, open to the sky, which have been mentioned: here a gladiatorial stone and a solar altar, elevated on a low platform, stood side by side. Each victim was first placed on the *temalacatl*, and compelled to engage in an imitation of the gladiatorial combat. For this purpose a shield and a wooden staff ornamented with feathers were placed in his hands; pulque of the kind called *teooctli*, such as was usually offered to the gods in sacrifice, was given him to drink before the contest commenced[2]. That it was a mere matter of form

[1] Ante, p. 504.

[2] Duran, ch. 87: 'Davanle una rodela y una espada (de solo palo) toda enplumada en la mano,' &c. The feathered staff, it will be observed, is the peculiar emblem of these solar victims.

is clear from the circumstances: the victim was a slave, utterly unskilled in fighting, and armed only with the solar staff, while his adversary, one of the principal Mexican warriors, attacked him with a sword set with sharp stones. On receiving the first wound, he was sacrificed on the solar altar. Mexican historians, busy in describing the execrable barbarities of this festival, have overlooked its true meaning. Its solar character is established by the sacrifice of representatives of all the gods, which clearly indicates a commemoration of the creation of the Sun, by the equipment of the idol as the solar traveller, by the shield and feathered staff given to the victims, and by the use of the *quauhxicalli* or solar altar: the steps, moreover, by which this was approached was sculptured with a solar disk and tables of the calendar[1]. That it was an agricultural rather than a military feast is indicated by the fact that the victims were slaves, and that bunches of dried maize-ears, which the peasants had kept since the harvest suspended in their huts, always formed part of the offerings to Totec. This god was considered to have been borrowed from the Zapotecs of Xalisco, to whom, as we have seen, the Mexicans were indebted for one of their Earth-goddesses[2]. Like another solar god who remains to be described, he was the Sun-god of a district to the northward of Anahuac[3].

Quetzalcohuatl.

The description of the solar messenger sacrificed by the Mexican warriors in the House of the Eagles recalls in a remarkable way another important Mexican deity hitherto only noticed in passing: this is Quetzalcohuatl, an ancient god of the Toltecs, who, according to their traditions, had once been the sovereign chief of Tollan, their principal seat in past times, and who was at the time of the conquest the principal god of the ancient Toltec pueblo of Cholula. The worship of Quetzalcohuatl was general throughout Anahuac,

[1] Duran (ch. 87), in passing on to describe the festival of Nauhollin, speaks of the latter as 'another' festival having a solar meaning (*otra* fiesta de la significacion del sol). This implies that he considered the festival of Totec to be of a solar nature, though he seems not to have been aware of its precise significance.

[2] Ante, pp. 466, 472.

[3] Totec is identical with Xipe, mentioned above, p. 481.

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but Cholula was its chief centre: the word *teotl*, when used by the Chololtecs in an absolute sense, always denoted Quetzalcohuatl, precisely as at Mexico it denoted the Sun. At Cholula he was regarded not only as a god but as an ancestor: his image was pointed out to the Spaniards as that of the 'Father of the Toltecs.' According to one account of the migration of the Mexican tribes from the seven caves in the north, Quetzalcohuatl was the seventh and youngest son of the common father Iztacmixcohuatl, and had colonized not only the district of Cholula, but that of Tlaxcallan[1]. In Cholula the officials of this god were addressed by his name: collectively they were denoted by the name in its plural form Quequetzalcohua[2]. The word simply means Feathered Serpent: although other meanings have been extracted from it by the ingenuity of antiquaries, all doubt as to the necessity of accepting it in the literal sense is removed by the frequent occurrence, in Mexican pottery and sculpture, of the figure of a snake decorated with feathers. These artistic representations, all of which belong to the latest period of ancient Mexico, merely represent the name in the manner of a rebus, and not the personage whom it denoted. Quetzalcohuatl was not a serpent, precisely as Huitzilopochtli was not a humming-bird: these are merely names given to powerful beings who possess the general attributes of men. Both in legend and when embodied for the purpose of worship, the Mexicans always represented Quetzalcohuatl under the form of a man, wearing a mask with a bird's beak: his legend, as it has come down to us, contains no allusion whatever to the serpent. Only one thing connected with him gives a clue to the explanation of his name: this is the traveller's staff, decorated with plumes, which he carries in his right hand. The word *cohuatl* (snake) secondarily designates any implement in the nature of a stick or staff[3]. It was from his wooden

[1] Gomara, Conq. de Mejico, cap. 218. In this account most of the first settlers have local names (Otomitl, Mixtecatl, Ulmecatl, Xicalancatl, &c.): the chief who colonized Tenochtitlan (Mexico) is called Tenuch.

[2] Torquemada, vol. ii. p. 52. Probably these officials carried the peculiar staff which was the god's distinctive badge, and was itself called *quetzalcohuatl*.

[3] The agricultural digging-stick was called cohuatl: in the vocabulary

staff, decorated with plumes, that Quetzalcohuatl derived his name, precisely as that of Tezcatlipoca was derived from his fiery shield: this is clear from the circumstance that this staff appears in some of the Mexican pictures in the form of a snake having plumes attached to its head[1]. The solar messenger of the Mexican warriors, it will be remembered, carried a feathered staff in the right hand; like Quetzalcohuatl, he carried in the left a small round shield. The victims sacrificed to the Sun-god of Xalisco were equipped in precisely the same way. We have seen that according to Mexican ritual the victim was usually attired to represent the deity to whom he was sacrificed. The equipment of these solar victims irresistibly suggests that the Sun himself must at some time have been worshipped under the form of a man similarly provided. We undoubtedly have such a man in the solar idol of Xalisco, above mentioned; in Quetzalcohuatl, if the same reasoning may be applied, we probably have the ancient Sun-god of the Toltecs. Both are gods of northern districts: both appear to represent the Sun in his character of the traveller who gives light and life to the world.

appended to Oviedo's General History the word *coa*, identical with it, is erroneously attributed to the Cuban language. A pine torch was also called xiuhcohuatl. (*Quetzalli*, a plume, is from *quetza* = stands up.)

[1] The Mexicans, it ought to be mentioned, firmly believed in the existence of a feathered species of snake, which they also called *quetzalcohuatl*. Sahagun's description of this imaginary reptile, which he probably gives exactly as he took it down from the lips of the Indians, will be found in Book XI. of his work (ch. v. par. 6). It abounded, according to this account, in the hot lowlands of Totonacapan: it was seldom seen, and the nature of its food was unknown. It was of middle size, about as large as a water-snake. It was called *quetzalcohuatl* because feathers grew on it (cria plumas) of the same kind as the brilliant green feathers used as plumes or *quetzalli* (the tail-feathers of the *tzinitzcan* or Trogon Mexicanus): these were clustered round its neck, while on its tail and joints it had blue feathers like those of the *xiuhtototl* (the Guiaca caerulea). 'When it is seen, it bites the person who sees it (cuando aparece es para picar al que la ve). It flies through the air at him (vuela) when it bites him: when it has bitten him, both he and the snake die immediately.' In these circumstances, positive testimony to the existence of the creature could hardly be expected. Sahagun (still writing down exactly what he was told) describes another snake as having two heads, one at each of its extremities.

Las Casas (Apologetica Hist. cap. 122) adds to this that the *quetzalcohuatl*, according to the Indians, was sometimes transformed into the *tzinitzcan*, also commonly found in Totonacapan.

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Legend of Quetzalcohuatl.

Though a strict examination of the legend of Quetzalcohuatl may not completely justify the conclusion of the eminent ethnologist who first identified him as a Sun-god, that it forms a more compact and perfect series of solar myths than is attached to the name of any single personage in Aryan mythology[1], there can be no reasonable doubt that he is, if not the Sun himself, at least a solar personage. He is universally described as the ruler of the region of the air, and the commander of the winds: hence some mythologists have fallen into the very excusable error of identifying him with the Wind itself. From certain indications which will presently appear, it is most probable that he really represents the Man of the Sun, who is conceived as having quitted his solar abode for a season, for the purpose of instructing mankind in those arts of life which especially belong to the stage of natural subsistence; who is worshipped as a god during his sojourn on earth, and who disappears before the gods of a later stage of advancement, who are described as cunning wizards. The wooden staff, often very elaborately decorated, was in Mexico the symbol of the peaceful traveller, especially of the pedlars by whom the trade of Anahuac, excepting the boat-traffic on the lakes, was exclusively carried on[2]; such wandering pedlars were extremely numerous in Cholula, the chief seat of the worship of Quetzalcohuatl. These itinerant traders probably exercised a distinct influence over the progress and spread of advancement: Quetzalcohuatl is represented as a traveller, and a traveller who teaches men the arts of life. The arts of cutting jade, and of working in silver and gold, were attributed to Quetzalcohuatl: he was also credited with the invention of the calendar. It is remarkable that in the original Mexican legend he is not credited with the

[1] Tylor, Researches into the Early History of Mankind, p. 153.

[2] Sahagun (Lib. I.) gives a curious account of the worship of these staves by the Mexican pedlars. On making a halt for the night they tied their staves in a bundle, and sprinkled them with blood drawn from their ears, tongues, and arms. Incense was burnt before this fetish, which was considered to represent their guardian deity Yacatecuhtli; on their return food, flowers, and tobacco were offered to it. Probably the staff decorated with feathers was the recognised symbol of the peaceful traveller as distinguished from the armed warrior, and secured a friendly reception to those who carried it.

discovery of maize-cultivation: this deficiency was supplied by the Maya tribes, to whom he was known as Cuculcan and Gucumatz, both names being literal renderings of his Mexican name[1]. Quetzalcohuatl, for the Mexicans, embodied an imaginary age like that known in European mythology as the age of gold, in which the earth brought forth its fruits in abundance without the labour of man. Maize, pumpkins, and cotton grew spontaneously, the two former of enormous size, the last in various brilliant colours[2]. The cacao-tree, it appears, also flourished on the highlands of Anahuac. Innumerable birds filled the air with song, and furnished men with the materials of food and ornament: gold, silver, and jade were everywhere found in profusion. Quetzalcohuatl had houses made of green jade and other precious stones, and of white and red shells, decorated with brilliant feathers. All this appears clearly to indicate him as the god of the earliest stage of society: this is confirmed by the circumstance that he is represented as a peaceful ruler, averse alike to war and to human sacrifices. Drunkenness was unknown in the state of advancement which he represents: the intoxicating pulque was presented to him for the first time by the cunning wizard Tezcatlipoca. His true parallel in the Old World is the primitive solar god Saturn: he represents the agency by which the earth is made to bring forth spontaneous fruits.

Departure of Quetzalcohuatl.

The genuine legend of Quetzalcohuatl, as it appears in Sahagun[3], consists simply of the story of his rule in Tollan, of his persecution by wizards, of whom Tezcatlipoca was the chief, and of his departure thence to Tlapallan, the place of bright colours. According to some writers, on quitting Tollan, he proceeded to Cholula, where he dwelt for twenty years. This is clearly an addition invented by the Chololtecs: according to the original story he proceeded by way of the valley of Mexico, making his first

[1] Ante, p. 322. Although in the original Mexican legend the discovery of maize-cultivation is not attributed to Quetzalcohuatl, this belief, of Maya origin, seems to have been adopted by the Mexicans. Cuculcan is 'Feathered Serpent' in the Maya of Yucatan, Gucumatz in that of Guatemala (Quiche).

[2] Ante, pp. 370, 413.

[3] Lib. iii. cap. 3–14.

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halt at Quauhtitlan. Before his departure, he buried his treasure of gold and silver in the mountains, burned his richly decorated dwellings, changed the cacao-trees into mezquites, and commanded the birds to quit Tollan and betake themselves to the district of Mexico. The retreat of Quetzalcohuatl changed the face of the country: and the wizards vainly sought to undo the mischief which they had wrought. They intercepted him at Coaapan, which seems to be identical with one of the wells on the island of Mexico, already mentioned[1], and besought him to return. Quetzalcohuatl refused: the Sun, he said, called him[2]. The wizards, pretending that the art of working in metals, fine stones, and feathers would be lost by his departure, tried to strip him of his ornaments: these he threw into the Coaapan, where the Indians fancied them to be still visible. He reached the sea at the coast of Tabasco, and floated away on a raft of serpents[3]. The Maya tribes, who inhabited the coasts along which his journey would then be continued, attributed to Quetzalcohuatl the origins of their own advancement. There seems to be little doubt that this advancement was largely borrowed from the early Mexicans of the plateau: the legend of Quetzalcohuatl itself may have been brought from Mexico to Chiapas and Yucatan by those who introduced into the latter districts the Toltec calendar and architecture. The Mayas, however, considered their advancement to be indigenous: and there existed a tradition among the Mexicans themselves to the effect that Quetzalcohuatl had originally come to Anahuac from Yucatan[4]. The truth probably is that the legend of the Man of the Sun, who instructed savage men in the rudimentary arts of life, was common to both districts,

[1] Ante, p. 445.

[2] 'Vinieron a llamarme, y llamame el Sol.'

[3] 'Una balsa formada de culebras, que se llama *Coatlapechtli*.' Here, again, the word *cohuatl* must clearly be understood as meaning a wooden staff. The *coatlapechtli* is evidently the same kind of structure as the litter, formed of staves tied together, on which Huitzilopochtli usually appears seated: in the old paintings these staves have serpents' heads. Possibly the maize-goddess Chicomecohuatl (ante, p. 424) was originally so named from seven wooden staves similarly tied together and forming the framework on which the fetish which represented her was constructed.

[4] Las Casas, Apologetica Historia, cap. 122.

and arose at a very early period, contemporaneously with the dissemination of the advancement which it was invented to explain.

What conclusively connects Quetzalcohuatl with the Sun is the fact that in the Mexican paintings the solar disk and semi-disk are found in combination with the plumed serpent as appendages to the human figure which represents him. In more than one instance this figure occurs in combination with another figure manifestly representing the goddess, identified above as the goddess of maize, of the National Museum of Mexico[1]: the five solar symbols arranged above the figure render its identity complete. Sometimes the Sun-god appears borne through the air on a feathered serpent[2]. Quetzalcohuatl evidently is rather a servant of the Sun than the Sun himself: this is confirmed by the significant passage in his legend which represents him as summoned away by the voice of the Sun. He is, as we have pointed out, the agent of the Sun in causing the earth to bring forth its spontaneous fruits: the reign of human labour and human cunning begins with his departure. The Sun-disk is frequently, though not always, found in connection with the portable idols which represent him. Specimens of these, which are found in great abundance throughout Anahuac, may be seen in the principal museums of Europe; their great number is evidently a measure of the popularity which Quetzalcohuatl enjoyed. Sometimes the Sun-disk is attached to his head-dress: in some small idols he rather appears to be coming forth from the Sun, which figures as a distinct object behind him. Taking this in connexion with the general tradition which represented him as a man, who accomplished a definite mission on the earth and departed to Tlapallan, the Place of Bright

[1] The so-called Teoyaominqui (see ante, p. 423). The best example is in the Codice Vaticano (Kingsborough, vol. ii. part 1, tav. 48). The old Italian interpreter of the Codex explains the female goddess as 'La Terra' (Kingsborough, vol. v. p. 187); this practically confirms the identification of the figure as the Maize-goddess. Another, closely resembling the last-mentioned, will be found in the Codex Tellerio-Remensis (Kingsborough, vol. i. part 2, plate 25).

[2] Bodleian (Laud) Codex, Kingsborough, vol. ii. part 2, plate 14.

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Colours, the house of the Sun, in the east, it is clear that he represented not precisely the Sun as a substantive object, but rather the Man of the Sun, who visits earth for the benevolent purpose of instructing men in the rudimentary arts of life.

Return of Quetzalcohuatl.

One more proof of the connexion between Quetzalcohuatl and the Sun remains to be given. Mention has been made of the belief entertained by the Totonacs[1], that the Sun would one day send a god, whom they described as a son of the Sun, to put an end to the tyranny of the Mexicans, and the worship of Tezcatlipoca, and restore the age of peace and abundance which had been disturbed by their invasion. This belief was not peculiar to the Totonacs: it was shared by the inland tribes who had fallen under the domination of the lake pueblos. The expected deity, as was proved on the arrival of the Spaniards, was none other than Quetzalcohuatl, who had taken his departure by way of the sea which washes the coast of Totonacapan. On his return, it was said, this emissary of the Sun would restore the golden age: Tezcatlipoca and the Mexicans would be expelled: maize, pumpkins, and fruits would be of large growth and delicious flavour, as of old: the life of men would be lengthened to its ancient span. Human sacrifices were offered every year in order to procure the return of Quetzalcohuatl: the victims were understood to be messengers to the Sun, charged with the duty of representing to him the misery of the Totonacs, and of praying him to send the expected deliverer[2]. When the ships of Cortes were first descried on the coast, it was supposed that Quetzalcohuatl was actually returning, bringing with him the houses which were to form his teopan. The disembarcation of the Spaniards caused general disappointment: 'These,' the bystanders said, 'are many gods; it is not our god Quetzalcohuatl[3].'

Sun-worship in New Granada.

The religion of the small advanced district of New Granada, so far as it is known to us, fundamentally resembled that of Peru. Like the Peruvians, the Chibcha or Muyscas

[1] Ante, p. 417.

[2] Torquemada, vol. iii. p. 134.

[3] Id. vol. ii. p. 51.

appear to have begun by worshipping natural objects; to have proceeded to the conception of spirits and of a Creator-god, and finally to have added to these the worship of the Sun and Moon. Human victims were offered to the Sun only. These were usually war-captives, whose blood was sprinkled on certain stones or rocks described as receiving the sun's rays at his rising, and which were probably employed in determining the solstices. The most important solar sacrifice took place at intervals of fifteen years, at which periods the reckoning of the moons, by sequences each consisting of twenty, and that of the solar years, approximately coincided. On this occasion the Muyscas sacrificed a victim to whom they gave the name of Guê-za, or the 'houseless one,' because he was brought from a tribe of the distant plains of San Juan, to the east of the plateau: the festival was called Quihica or 'the gate' (of the new period). This victim was understood to represent a solar man called Bochica, who like Quetzalcohuatl in Mexico, had visited the plateau of Bogota for the purpose of instructing the people in the arts of life. The Chibchas applied to the Spaniards the name (Zuhe) which they used to denote the Sun: evidently these powerful beings were considered to be his children or emissaries. It is not impossible that they were supposed to be the Incas of Peru, of whom some knowledge probably existed on the plateau of Bogota.

Religious endowments.

When we examine the economic arrangements provided for the purpose of securing the continuance of the sacrifices, the effect produced by these religious systems on advancement becomes fully apparent. Both in Mexico and in Peru, precisely as in ancient Greece and Rome, lands of considerable extent were assigned to the gods. The method of endowment in Peru has been already described in the case of the Sun. The god was provided with a house, male and female attendants, and an allotment of land and flocks of llamas and pacos. This method of provision was next extended to the other great huacas[1]. It was also applied to the service of the distinguished

[1] Ante, p. 508.

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dead, whose mummies had their chacras and flocks, their serfs and women: it was the duty of the last to prepare food, chicha, and clothing for the dead, and to present these to their mummies, precisely as if they had been alive[1]. The minor or local huacas appear to have been similarly endowed, though less completely: sometimes the idol had only a single female attendant, who was assigned to it at an early age, and considered as its wife[2]. These lands, originally cultivated by the common labour of the village[3], ultimately in many cases passed into the care of serfs specially assigned to the huacas. In the district of Mexico, the endowment of the gods was carried out on precisely the same principle, and on an equally extensive scale, though in a different manner. In some pueblos most of the lands which were elsewhere held on a military tenure by the warriors were assigned for the service of one or more among the teopans: the peasants, moreover, of these pueblos were bound to construct and repair the fabrics when required, and to furnish a continuous supply of fuel for the teocalli and the apartments occupied by the officials. Besides these large estates, many of moderate size had been assigned to particular teopans by successive chiefs. Occasionally these were farmed out at rents in kind: in other cases they were cultivated by the peasantry of the village, or by the youths who were brought up in the teopans, under the supervision of the officials. In any case large storehouses of maize, beans, chilli pepper and chian, filled from the produce of these lands, were conspicuous among the buildings of each teopan: these furnished the offerings to the gods, the subsistence of the officials, and the materials of the religious festivals. Besides produce capable of storage, turkeys and other domesticated birds, and large quantities of pulque, were regularly brought to the teopans from the estates belonging to each. Other pueblos were bound to supply the residents of the teopan with game, fish, and fruits[4]. To each teopan, as in Peru,

[1] Rel. de Santillan (Tres Relaciones, p. 34). [2] Arriaga, p. 20.

[3] The chacras of the huacas were always cultivated first (Id. p. 24).

[4] Zurita, Rapport sur les Chefs, &c. (ed. Ternaux-Compans) Par. 18: Gomara, Conq. de Mejico, c. 80: Torquemada, vol. ii. p. 164.

was attached a number of women, whose duty it was to prepare the food of the residents.

Officials of the Gods and the dead.

In connexion with this system of endowment, both in Mexico and Peru, a considerable number of men and women were assigned as the special attendants or officials of the gods and temples: in Peru, besides these, there existed a large class of persons, unknown in Mexico, who performed precisely similar duties in regard to the dead. These officials of the gods were known in Peru by the general name of *huacacamayoc*, which corresponds exactly to their Mexican name *teopixqui*, both words simply meaning 'he who has charge of the gods.' These officials performed in the houses of the gods precisely the same duties which were performed by servants in the house of a chief: they guarded the stores of food produced by the sacred estates, cleansed the buildings, maintained the fires, prepared the food and drink of the deity in the prescribed way, and served it before him at the prescribed times. Through them alone those of the outer world communicated with the deity: when the ritual required that the god should go abroad, it was by them that the image which represented him was borne on the sacred litter. These officials, who were naturally maintained out of the sacred estates, formed both in Mexico and in Peru a large and increasing body: they appear to have been chiefly taken from the warrior class. Such was also the case with the officials of the dead, who collectively formed so large a proportion of the population in Peru at the conquest. Most of the inhabitants of Cuzco, the Spaniards were told, were assigned as *mamacuna* or *yanacuna* to the service of some mummy; those who were of Inca descent were usually thus provided for. The goodwill of the dead was in Peru thought to be necessary to the prosperity of the living. Hence they had a part in all the affairs of life: they were consulted, like the gods, on important occasions, and brought out to share in all feasts, whether secular or sacred. Arranged in order, according to their seniority, each mummy was duly served with a portion of food, which was burnt before it: chicha was poured into its lips from

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its own drinking vessel. The Peruvians of the upper class, according to the Spaniards, spent most of their time in eating and drinking with the dead, and in dancing and howling before them[1]. The sovereign chiefs, fully aware of the absurdity and wastefulness of such a system, were unable to change it: those interested in its maintenance, it would seem, were too powerful. Huascar, the last Inca despot of Cuzco, is reported to have said that all the dead ought to be buried, and their property to be taken from them. He did not desire to reign over mummies, but over living men: the former, he complained, were in possession of the greater part of his dominions. These revolutionary views, which seem to have been extended to the minor huacas, deprived Huascar of the support of the Inca class; they sided with his half-brother Atahuallpa, in the struggle which cost Huascar his sovereignty and his life[2].

Reaction against the huacas.

We have remarked that in the development of religious conceptions and practices man ultimately advances from waste to economy. It is natural that the settled cultivator should exhibit an intense material devotion to the gods whom his peculiar mode of life calls into existence. As the dependence on agriculture becomes more and more absolute, the development of religion and religious ceremonies becomes more and more marked. Festivals in honour of the principal gods are multiplied, and the times of their celebration occupy the most important places in the calendar: sacrifices become more and more numerous, if not absolutely more costly: temples and temple-worship assume an importance which had no previous existence. Experience teaches man that the return which the earth yields to his labours is precarious; and when his crop fails, he explains it by supposing that he has neglected some among the powers who are able to influence the result of his labours. Hence arises a disposition among agricultural peoples both to increase the number of their own gods, and to borrow those of neighbouring nations. The latter tendency, as might be expected, is most prominent in

[1] Pedro Pizarro, ap. Navarrete, Doc para la Hist. de España, Tom. v. p. 276.
[2] Id. p. 240, &c.

Mexico and Central America, where so many neighbouring communities maintained an independent existence. The former predominated in the dominion of the Incas, where the number of huacas had in consequence multiplied so greatly that a strong reaction against it had set in long before the Spanish conquest. It was the policy of the Apu-Ccapac-Incas to discourage the worship of the minor huacas, and to concentrate the religious devotion of the Indians on the most powerful among the universal gods; and we know that the main reason for this policy was an economical one, and that the destruction of food involved in the service of the huacas, when at its greatest extent, was enormous. This reaction, according to tradition, had begun in the time of Manco Ccapac himself[1]. Almost every Apu-Ccapac-Inca, except Pachacutic, was credited with the policy of diminishing the worship of the multitudinous minor local huacas, and of limiting the sacrifices as far as possible to the Creator, Sun, Thunder, Earth and Moon[2]. Pachacutic, on the other hand, appears to have decidedly leaned to the contrary policy of recognising all the huacas in the country: to him is ascribed the institution of a special sacrifice, performed on the institution of each successive Apu-Ccapac-Inca, in which every huaca, great or small, throughout the dominion, was served with a share, though the shares were so infinitesimal as to be capable of being flung to the huacas of the inaccessible hill-tops by a sling[3]. Probably the countless minor huacas which existed throughout Peru in historical times were chiefly maintained in the interests of those who were attached to their service, and had no very strong hold on the popular feeling: it is at any rate certain that when long after Christianity had been introduced, a great pagan reaction spread over Peru, and the Indians believed that their huacas, temporarily killed, had been restored to life, the statement that half of

[1] 'Este Ynga Manco Ccapac fue enemigo de las huacas' (Rel. de Salcamayhua, Tres Relaciones, p. 244).

[2] Salcamayhua attributes this policy to Mayta Ccapac, who even discouraged the worship of the Sun and Moon (p. 255), to Ccapac Yupanqui (p. 264), to Tupac (p. 283), and to Huascar (p. 316).

[3] Molina, ap. Markham, Rites and Laws, p. 55.

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them had been united to the Sun-god at Titicaca, and the remainder to the Creator-god Pachacamac, was generally accepted[1]. The efforts of the sovereign chiefs of Peru to discourage the worship of the minor huacas had evidently not been altogether fruitless. The beginnings of a similar policy in Anahuac are perhaps traceable in the attitude assumed by Nezahualcoyotl towards the multitudinous deities of the Mexican pueblos[2]. This chief, like the Emperor Julian, while outwardly recognising all the established gods, seems to have leaned to the concentration of religious devotion upon the Sun and the Earth, as the predominant objects of worship. The materialism, however, of the Roman Emperor, unlike that of the famous Tlatoani of Tezcuco, represented retrogression rather than advancement. The latter embodied the most rational theory invented by the aborigines of the New World; the former in effect discarded the philosophical theism of Greece, the substantial foundation of the religions of modern civilisation. For the true parallel, in the Old World, to the opinions entertained by the American reformers of religion in the fifteenth century, recourse must be had to a period two thousand years before Julian, when Amenhetp IV. an Egyptian king of the eighteenth dynasty, proclaimed himself a votary of the solar disk, and sought to abolish all forms of religion except the worship of the solar deities. This attempt, though to some extent foreshadowed by the religious proclivities of his immediate predecessors, was as little successful as the project of Huayna Ccapac for suppressing all the Peruvian gods but the Creator; and it would have completely passed into oblivion but for the sculptures and inscriptions of the grottoes of Tel el Amarna.

Function of Defence.

To this sketch of the effect of stationary agriculture in leading man from savagery to higher grades of advancement, it remains to add some notice of an elementary division of labour to which it gives rise—that of the labourer and the warrior. In its beginnings in the savage

[1] Molina, ap. Markham, Rites and Laws, p. 60.

[2] Ante, p. 490.

life, agriculture is universally the task of the women, the men being employed in the more important tasks of hunting and fishing. As the cultivation of the soil assumes a more and more important aspect, and game decreases in the neighbourhood of the settlement, the men participate in the toils of the field: and as the cultivable area is extended, and labour assumes fresh forms of employment, the males become yet more closely associated with what has now become the principal business of life. But here an obvious difficulty threatens to bar the way. The traditions of the Toltecs, already referred to, illustrate the fact that those who are advancing above savagery are eminently exposed, in consequence of their stores of food, to attacks from savage neighbours: attacks which, in consequence of their peaceful mode of life, and disuse of the practice of hunting, they find it difficult to sustain. The situation of the settled agricultural peoples of the inter-tropical mountain districts might indeed be thought to secure them to a great extent against invasion: and it may be safely concluded that the progress which they achieved was in a great measure due to the immunity which they consequently enjoyed from the hostile migrations which were ever sweeping over the face of the forest tracts. It is, however, none the less true that their advancement was universally maintained in the face of constant attacks from less advanced and generally more warlike neighbours. Beginning with Peru, we find evidence of this in the strong fortifications of the Cuzco district on the side of the forested montaña; in the accounts of frequent attacks by savage tribes which occur in Peruvian tradition; and in the fact that the robust and warlike tribes of the Plate River, though themselves to some extent cultivators, made successful raids, in the course of which they possessed themselves of considerable stores of gold and silver, on the southern frontiers of the Inca dominion. These tribes, in their turn, appear to have been continually harassed by their less advanced neighbours[1]. The advanced tribes of New Granada, though they were in possession of a situa-

[1] Southey, Hist. of Brazil, vol. i. p. 331.

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tion of exceptional strength, being only assailable from the lowlands in four places, maintained a constant struggle against the Panches and other savage peoples. In Central America and Mexico, where the elevated region occupies a proportionally larger area, the advanced tribes were subject to less disturbance; but further to the northward, where the continent begins to increase in breadth, we find that the agricultural peoples of northern Mexico were at their discovery engaged in constant warfare with attacking savages: a struggle which is still maintained between the modern Mexicans and the Apaches, and has probably existed ever since agricultural tribes made northern Mexico a place of settlement[1]. Lastly, while the abandonment of a settled life among the mound-building Indians of North America may be partly attributable to such other difficulties attending stationary agriculture as have been already enumerated, it is in accordance with all known analogies to conclude that it was largely due to the attacks of hunter populations, which the changed habits which agriculture involves made it impossible to defeat. In order that the agricultural organisation may acquire stability, provision must be made for the creation and maintenance of a permanent warrior class. How this was effected will be shown in the succeeding volume.

[1] Relation of Pedro de Castañeda, part 2, ch. 5.

NOTE TO PAGE 279, *ante*.

That 'good' originally meant 'good for food,' and 'evil' the reverse, may be illustrated by the fact that the Mexican word *qualli*, meaning 'good' in general, has been undoubtedly formed from *qua* = to eat, a parallel form *qualoni* (= eatable) being still in use in the limited sense. 'Evil' is *amoqualli* or *aqualli* (= not-good): *quaqualli* = extremely good. *Tlaqualli* (= something good) means 'food' generally; so while *xochitl* means flower, *xochiqualli* (= good or eatable flower) means fruit. *Niqualtia* (= I do myself good) denotes the act of making a meal. The Heb. טוב (good) seems to have been primarily applied to ripe fruits; Schultens (ad Prov. Sal. xiii. 2) considers the original sense to have been 'succulent' (succosum, uber, uberi succo vigens).

END OF VOLUME I.

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